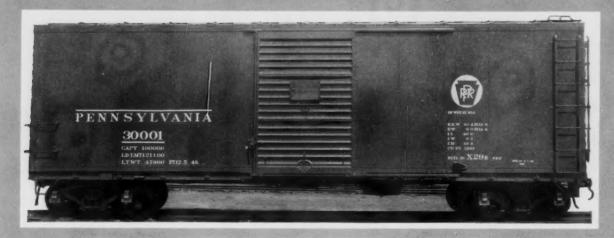
# RAILWAY AGE

WORKBOOK OF THE RAILWAYS

# NOW LOOK AT OUR SIDE

FOR BOX CARS



FOR REFRICERATOR CARS



FOR HOPPER AND GONDOLA CARS



# YOUNGSTOWN STEEL DOOR COMPANY

CAMEL SALES COMPANY . CAMEL COMPANY LIMITED



# for ALL-SEASON WEED and BRUSH CONTROL

 Whatever your particular weed, grass or brush control problem - Nalco has the safe, sure answer in this complete selection of proved chemical treatments . . . 10 in all.

Nalco also assures the most economical application possible...with mechanical spreaders and shaker boxes for small and hard-to-reach areas... with various sized drums, and tank car lots for use in modern Nalco Spray Cars.

Right now is the time to start your fullseason weed control program with Nalco Chemicals. Ask for full facts on scheduling and prices.

### NATIONAL ALUMINATE CORPORATION

SPRAY SERVICES DEPARTMENT

6200 West 66th Place P.O. Box 2944
Huntington, West Virginia In Canada: Alchem Limited, Burlington, Ontario

### CHEMICAL Nalco H-170 Weed Noico H-1708 Weed

5 Nalco H-176 Brush

9 Penta and Oil Weed

10 2, 4, 5.7 (liquid)

### DOSAGE One gal. per 1000

200 to 400 lbs. per

# APPLICATION

After predominant weeds emerge.
After predominant grasses emerge. Use in combination with Nalco H.170.

# SHIPPED

Tank cars and 54 gal. drums. Tunk cars.

54 gal. drums.

Tank cars and 55 gal.

Special 8000 gallon

Tank cars and 55 gal.

Tank cars.

Tank cars.

55 gal. drums.

OUCTS . . . Serving the Railroads through Practical Applied Science

PROTECTING MORE AND MORE CARS

WITH INEXHAUSTIBLE ENDURANCE

protection



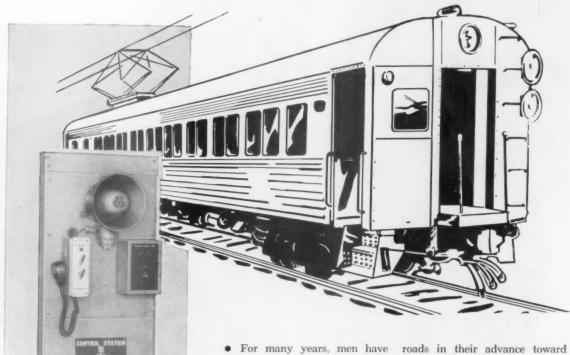
with endurance

MINER
FR-16
RUBBER DRAFT GEAR

W. H. MINER, INC. · CHICAGO

# **Another Important Tool for**

# RAILROAD AUTOMATION



To control train from wayside station. Operator turns top lever on locomotive control panel (rectangular box) to select running direction and the bottom lever for "stop," "neutral" and "run."

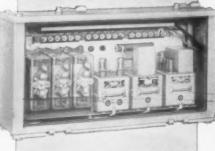
• For many years, men have dreamed of remotely controlling trains... envisioning an era when railroads would be completely automatized. Today, many of the basic devices for railroad automation, like UNION Centralized Traffic Control, Automatic Train Control, Route Interlocking, and the IDENTRA\* Train Identification system, have already been produced.

Now another tool, the Type "CY" Inductive Cab Signal System, has been added to the ever growing list available to the rail\*Trade-mark

roads in their advance toward automatic operation to reduce costs and increase efficiency.

Although the Type "CY" equipment was developed primarily for cab signal service in classification yards, the inductive principles on which this system is based can be adapted to the remote control of locomotive operation.

Recently, on the New Haven R.R., this new system, in conjunction with UNION Automatic Speed Control, was used to control a train remotely from a way-side station.



To operate train. "Train-carried" equipment box of UNION electronic remote control equipment, which responds to locomotive operation controls issued from wayside station.



### RAILWAY AGE

EDITORIAL AND EXECUTIVE OFFICES AT 30 CHURCH STREET, NEW YORK 7, N. Y., AND 79 WEST MONROE STREET, CHICAGO 3, ILL.

EDITOR James G. Lyne
EDITOR EMERITUS Samuel O. Dunn
EXECUTIVE EDITOR William H. Schmidt, Jr.
MANAGING EDITOR C. B. Tavenner
NEWS & FINANCIAL Fred C. Miles
WASHINGTON EDITOR Walter J. Taft
WESTERN EDITOR M. H. Dick

TRAFFIC & TRANSPORTATION
Joe W. Kizzia Gardner C. Hudson
Ernest V. Celmer

MECHANICAL H. C. Wilcox
G. J. Weihofen F. N. Houser, Jr.
ELECTRICAL Alfred G. Oehler
ENGINEERING M. H. Dick
R. E. Dove H. H. Hall, R. J. McDiarmid

SIGNALING & COMMUNICATIONS
Robert W. McKnight

Address and America	 		
REGIONAL NEWS New York Chicago			
PRESENTATION	 Char	les	Layng

June Meyer Wanda Brown

EDITORIAL ASSISTANTS Ann Ortlinghaus Shirley Smith

DIRECTOR OF PRODUCTION M. J. Figa, Jr., New York

DIRECTOR OF RESEARCH John W. Milliken

ART DIRECTOR Russell F. Rypsam

PUBLISHER
Robert G. Lewis, New York

Robert G. Lewis, New ADVERTISING SALES DEPARTMENT New York 7, N.Y., 30 J. S. Crane Church St., WO-4-3060 C. W. Merriken J. S. Vreeland J. S. Vre F. Baker

Chicago 3, III., 79 W. J. R. Thompson Monroe St., RA-6-0794 F. W. Smith H. R. Dunlop J. D. Dolan

Cleveland 13, O. Ter- H. H. Melville minal Tower, MA- C. J. Fisher minal 1-4455

Dallas 19, Tex., 3908 Joseph Sanders Lemmon Ave., Lake-side 2322

Los Angeles 17, Cal., Fred Klaner, Jr. 1127 Wilshire Blvd., MA-6-0553

Portland 5, Ore., 1220 L. B. Conaway S.W. Marrison, BR-

San Francisco 4, Cal., Lewis Vogler 244 California St., GA-1-7004

London E.C. 2, Eng. 48 Sibley - Field Pub-London Wall lishing Co., Ltd.

Frankfurt am Main (16), International Ad-West Germany, Wittel-sbacher Allee 60

Published weekly by the Simmons-Boardman Publishing Corporation at Orange, Conn., and entered as second class matter at Orange, Conn. James G. Lyne, president. Arthur J. McGinnis, executive vice-president and treasurer. J. 3. Crane, vice-president and secretary.



SUBSCRIPTION TO RAILROAD EMPLOYEES ONLY IN U. S., U. S. POSSESSIONS, CANADA AND MEXICO, S4 ONE YEAR, S6 TWO YEARS, PAYABLE IN ADVANCE AND POSTAGE FREE TO RAILROAD EMPLOYEES ELSEWHERE IN THE WESTERN HEMISPHERE, \$10 A YEAR, IN OTHER COUNTRIES, \$15 A YEAR—TWO-YEAR SUBSCRIPTIONS DOUBLE ONE-YEAR RATE. SINGLE COPIES 50c. EXCEPT SPECIAL ISSUES \$1. CONCERNING SUBSCRIPTIONS WRITE R. C. VAN NESS, CIRCULATION DIRECTOR, 30 CHURCH ST., NEW YORK 7.

### Workbook of the Railways

Vol. 140, No. 17 April 23, 1956

### CONTENTS and

# Week at a Glance

### Piggybacking takes a nosedive . . .

... Railroad t-o-f-c business has slumped sharply since the Ex Parte 196 freight rate increases went into effect last March 7. In areas where truckers have not yet raised their rates, shippers are diverting consignments from piggyback to allhighway movement. Many railroads believe, however, that the situation will have a short run and that traffic will return to them once truck rates catch up.

### ICC defends ban on slow movements . . .

... "No group of shippers is entitled to use freight cars for storage purposes, particularly during a car shortage," the ICC says in defending its Service Order No. 910, which prohibits railroads from willfully delaying movements of loaded freight cars. The commission also said there are strong indications that the freight car shortage will be greater in 1956 than in 1955. . . . p.8

### FORUM: Rates are everybody's business . . .

... and the adjustment of railroad prices and services to meet the complex and changing demands of today's and tomorrow's highly competitive market is a job important enough to chal-. . . p.23 lenge every man on the payroll.

### Do-it-yourself grading . . .

... pays off in low unit costs, the Frisco has discovered. Most earth-moving work required in construction projects is now performed by company-owned equipment, and the savings over contractors' charges are substantial.

### How a small investment saves car hours . . .

. . . Revision of car repair facilities and operations at the Central of Georgia's Industry yard in Atlanta saves 24 hours or more on most repair jobs, with no change in the number of car department employees. The road's transportation department says requests for explanation of cars delayed in the yard have virtually disappeared. . . . p.28

### More help from a town . . .

. . . may mean, and frequently does mean, the difference



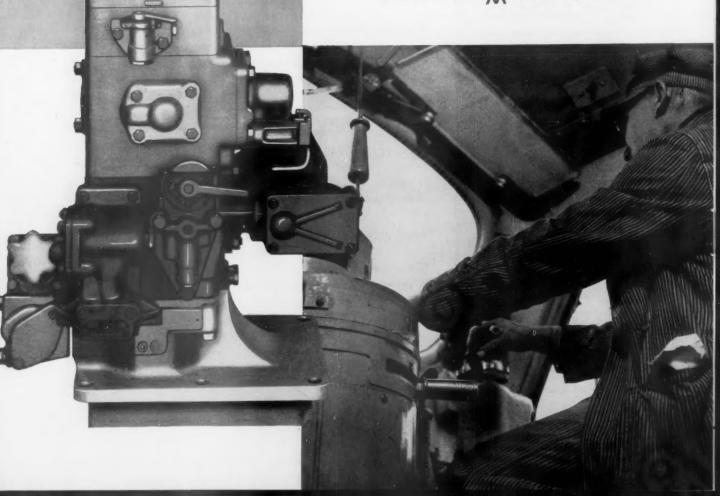
Sectional construction, as followed in the 24 RL Brake Valves, provides for the addition of new or improved functions merely by the substitution of sections. The advantage, of course, is that the brake equipment can be kept modern with minimum investment as compared to entire brake valve replacement.

The most recent improvement that can be provided in this manner is the brake pipe pressure maintaining feature, which offers pronounced improvement in train brake operation plus outstanding maintenance economies that develop from uniform distribution of braking pressure throughout the train.

This feature can be incorporated in any D-24 Type Brake Valve now in service by replacing the existing Filling Piece Portion with the Conversion Filling Piece shown in color in the illustration. Write for our Circular Notice No. 1130 which gives complete details.

# Westinghouse Air Brake

AIR BRAKE DIVISION WILMERDING, PENNA.



### RAILWAY AGE

### **Current Statistics**

Operating revenues, two	months
1956	
	1,479,733,207
Operating expenses, tw	
	\$1,302,523,359
	1,154,849,156
Taxes, two months	
1956	\$169,354,631
1955	
Net railway operating in	
1956	
1955	
Net income, estimated, to	
1956	
1955	
Average price 20 railro	
April 17, 1956	
April 19, 1955	
Carloadings revenue frei	
Fourteen weeks, 1956	
Fourteen weeks, 1955	
Average daily freight ca	
Wk. ended Apr. 14, 19	
Wk. ended Apr. 16, 19	
Average daily freight ca	
Wk. ended Apr. 14, 19	
Wk. ended Apr. 16, 19	
Freight cars on order	33 1,704
April 1, 1956	
April 1, 1955	
Freight cars delivered	17,774
Three months, 1956	15.029
Three months, 1955	
Average number of rail	
Mid-March 1956	
Mid-March 1955	
1733	1,007,040

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AMD IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

### **Departments**

35
23
9
36
16
30
9
40
36

### Workbook of the Railways

### Week at a Glance CONTINUED

between feasibility and impossibility in solving the difficult problems created by highway grade crossings. Success in meeting such a situation at Centralia, Ill., makes a significant case history.

. . p.31

### Frozen foods are safe in 125-deg heat . . .

... Two refrigerator cars used for transporting frozen foods of all kinds across the Arabian desert are said to be the first in the world equipped with two separate two-stage low temperature refrigeration compressors. The compressors, built by Worthington Corporation, are required because of extremely high ambient temperatures prevailing in Arabia during most of the year.

... p.32

### COMING-Next week . . .

. . . Practical tips on a job that almost every railroad man has to do more or less frequently—How to run a conference.

### BRIEFS

### A rail removal rule of thumb . . .

... offered by PRR Vice-President Bevan is that "you can figure on about \$500 a mile saving, exclusive of salvage, for every mile of track you take up" in singling-up double track lines.

### Into Vancouver June 11 . . .

... That's the schedule set up for the Pacific Great Eastern's \$10-million extension, and the present plan is to have the first train move out of the new terminal at 4:30 that afternoon.

### UP inaugurates toll dialing . . .

. . . of long-distance telephone numbers between Portland, Ore., Tacoma and Seattle, Wash. This is the first installation of long-distance dialing on the railroad's private telephone network, and it is to be extended to other cities on the UP. To provide circuit capacity for the new toll dialing, carrier equipment was installed making use of existing line wires.

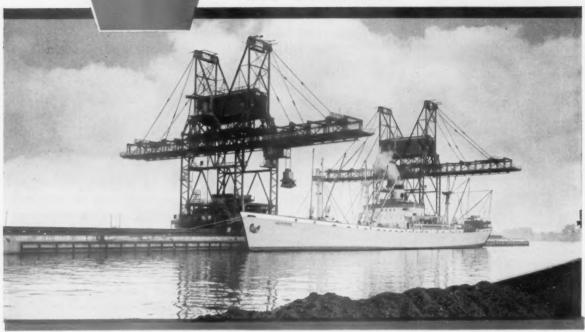
### Barge operators are smiling . . .

... because more waterside plant sites for industrial expansion and development have been picked since the first of this year than in any three-month period, at least since World War II.

new Pennsylvania RR pier handles up to 3600 tons

per hour with BROWNHOIST

ore unloaders



60 tons a minute! Seems incredible, but that's the production pace set by these two giant Industrial Brownhoist ore unloaders at the new Pennsylvania Railroad pier in Philadelphia, Pennsylvania. Towering over both pier and ocean-going ore vessels, the two enormous Brownhoist machines—each with a free-digging capacity of 1800 tons per hour-provide this ore terminal with the most modern and efficient unloading facilities in the United States. They can travel the full length of the pier and lower apron extensions from either side to obtain a reach of 72 feet from the dock. Each huge 25 ton capacity bucket rolls out, takes a bite, rolls back on the apron to drop its contents into a 100-ton receiving hopper, then rolls out for another bite. Time elapsed from bite to bite? Just 45 seconds!

The same engineering experience that made these Brownhoist ore bridges possible has also resulted in other fine Brownhoist materials handling equipment ...locomotive cranes, wrecking cranes, car dumpers, traveling bridge cranes, buckets. If you have a heavy duty materials handling problem, it will pay you to discuss it with our engineers at Brownhoist.



BROWNHOIST MATERIALS HANDLING EQUIPMENT GIVES A LIFT TO AMERICAN INDUSTRY

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN • DISTRICT OFFICES: New York,
Philadelphia, Cleveland, Chicago, Denver, San Francisco, Montreal
AGENCIES: Detroit, Birmingham, Houston

SUBSIDIARY OF

Penn-Texas

184

BROWNHOIST

### SHOWING EFFECT OF EX PARTE 196 . . .

# Piggybacking Takes a Nosedive

Railroads, losing business in many areas since 6% rate increase, must decide on paring t-o-f-c tariffs or "sweating it out" until more truck rates go up

"It's asking the shipper to pay a 6% penalty to route his goods by piggyback" a railroad traffic officer said last week in confirming reports of a t-o-f-c traffic tailspin.

The slump, Railway Age learned, is attributed directly to the Ex Parte 196 railroad freight rate increases which went into effect last March 7. Applied to most traffic, including piggyback, they amount to a 5½ or 6% rate boost.

"We chopped off our own heads" with the increase, one particularly pessimistic rail spokesman declared.

But, decapitation being a fairly irretrievable act, things are probably not quite that bad—vet.

The fact remains, nevertheless, that t-o-f-c business was won from truckers through intensive research, sales and operational campaigns in the past few years—obviously not long enough to develop a "piggyback habit" among customers. That leaves the service vulnerable to pick-and-choose routing by rate-conscious shippers

What is happening, is that in areas where truckers have not yet raised their rates, shippers are diverting consignments from piggyback to all-highway movement. Further complicating a picture which already looms as a real crisis for railroads, is that motor carriers are "flagging" individual commodities and destinations even where general truck rates have increased. This cuts straight at piggyback, leaving the rail rates high and dry.

Most motor carrier bureaus already have published rate hikes paralleling the railroad increase, and others are expected to do so soon. But it will be June 1 or later before the present "uncertainty" clears up on many roads, Flag-Outs the Snare—Individual rate cutting is called "the real hooker" by one piggyback salesman who says it will "take time to go back and get in line." Another piggyback manager says "we're off two cents a hundred on one commodity and it has cost us 17 loads from one firm that I know of."

According to J. L. Barngrove, Jr., general traffic manager, Lackawanna, there has been a "lull" in all rail business since railroads first sought to have the rate increase applied in February. But he expects the situation to be just "temporary" and

doesn't think it's "startling." At any rate, he notes—with an eye on rateclipping truckers—"the DL&W plans to keep its rates competitive."

"Our piggyback loads fell 40% since mid-March," says a spokesman for one Chicago road. Across town, another reports a drop of 25% in that type of traffic, while in St. Louis a third agrees that piggyback business has "tapered off" in the past three weeks.

Just Brief Slump—The consensus among eastern roads, though, is that the situation will have a short run and traffic will return to rail-



### Railroads Line Up to Pay \$688,000 in Taxes

The people of Cincinnati, Ohio, receive the semiannual real estate tax payments of six railroads serving the metropolitan area. Hamilton County Treasurer Paul A. O'Brien (holding the strong box), and Emmett Seery, chief deputy treasurer (left), prepare to accept the payments as railroad representatives line up with checks in hand. They are, left to right: W. K.

Weaver, Jr., superintendent, Chesapeake & Ohio; A. M. Harris, manager, Buckeye Region, Pennsylvania; J. W. Kunker, signal supervisor, B&O; (and chairman of the Railroad Community Committee of Greater Cincinnati); W. H. Sauterg, assistant real estate and tax agent, NYC; J. K. Booton, terminal trainmaster, N&W; and J. F. Hagmann, treasurer, Southern.

roads once truck rates catch up. There have been promises from shippers that this is the way it will go, but "you never know how much of that is just talk," one rail officer said—an indication, perhaps, that railroads fear they must go out and sell piggyback service all over again.

W. K. Tate, vice-president-freight traffic, New Haven, spoke of some "lessening in piggyback volume," but said he doubted the rate hike could account for this in the road's common carrier operation.

"Everything went out the window" however, on the NH's new interchange operation (Plan 2), he stated, because the Ex Parte 196 boost left the road non-competitive. An increase for New England truckers became effective April 16, though, and the New Haven is awaiting the results of this.

Rail-Trailer Company, middleman in the Pennsylvania's common carrier operation, reports business is off "some" right now.

The PRR's manager of Truc-Train service, H. C. Kohout, said the common carrier loss is "negligible" although "all rail bill of lading service has shown a slight decrease."

The pinch is reported greatest on westbound moves from New York and Philadelphia, but Mr. Kohout said "it doesn't look alarming to us right now." He pointed out that the PRR handled 4,943 trailers on flat cars in March, 4,487 in February.

In areas where truck rates remain below rail charges, the Baltimore & Ohio has "lost some movements," according to H. A. Witte, freight traffic manager, but the road has held or gained t-o-f-c traffic where truck rates went up too. "Shippers are just not using piggyback as much as before 196 went in" he said, but predicted the B&O will get back its share when rates are equalized.

Battle for Traffic—The Erie's B. F. Conway, freight traffic manager, echoed the note struck by the Lackawanna's Mr. Barngrove when asked about rate "flag-outs" by isolated truckers. "The Erie is always going to be competitive," he commented, while predicting that the current decline will be reversed by mid-May with the raising of truck rates.

"Hitting the ball where it's pitched"—in the words of a baseballminded agent—is the course that may be adopted by many roads that intend to meet competition where they find it—by trimming rates to fight selective pricing, if necessary.

The Santa Fe, for example, hopes to get its truck-competitive rates back in line by mid-May, even though its losses have been pretty well offset by gains in non-competitive traffic. Another Chicago road announces its willingness to gamble, if it has to, simply because "we need the revenue."

Meanwhile, a Chicago & North Western spokesman, going counter to the trend, says that "since our rates went up March 7, we have had an increase in business."

With the Burlington telling a like story, a partial explanation may be that the Middlewest Motor Freight Bureau was one of the first to publish a rate hike similar to the railroads'. Even so, there are rumbles of "flag-outs" in Iowa and Nebraska.

So far, no changes are reported in piggyback equipment plans as a result of the present situation. One road did say it has dropped plans to buy some new trailers and will get second-hand ones instead. "But the rate situation didn't have anything to do with that," a spokesman said.

## ICC Defends Ban on Slow Movements

Refusal to reconsider service order which court stayed is announced in unusual report predicting this year's car shortage will be greater than that of 1955

Defending its Service Order No. 910, which prohibits railroads from willfully delaying movements of loaded freight cars, the Interstate Commerce Commission has asserted that "no group of shippers is entitled to use freight cars for storage purposes, particularly during a car shortage."

The assertion came in an unusual report, made by the commission when it denied the petition of a lumber shipper for reconsideration of the order, which a court order prevented from becoming effective on schedule April 9. The commission report said there are "strong indications that the freight car shortage will be greater in 1956 than in 1955." It was unusual in that commission actions denying such petitions are normally announced in brief orders.

Operating Rules Order-Meanwhile, the commission issued three

other car-conservation orders, including Service Order No. 911 which prescribes railroad operating regulations for freight car movement. This is like former Service Order No. 904, in effect during the latter part of 1955. It requires a movement to be made on each loaded and empty car within 24 hours after such movement becomes possible and proper. The order becomes effective April 23, and will expire December 31, unless otherwise modified.

The other two new orders are designed to expedite release of cars at ports. They are Service Order No. 912, which applies to box cars and refrigerator cars and forbids railroads to allow more than six days free time on such cars held at ports for unloading; and Service Order No. 913, which applies to all cars held at ports for loading and forbids free time in excess of four days. The

orders are like former Service Orders 905 and 906, except that those allowed more free time—seven and five days, respectively. Like No. 911, they become effective April 23 and expire December 31 unless otherwise modified.

Something new has been added to commission service orders. After statements to the effect that an emergency situation required issuance of the order, there now appears this sentence: "Accordingly, the commission finds that notice and public procedure are impracticable and contrary to the public interest, and that good cause exists for making this order effective upon less than 30 days' notice."

The sentence has been inserted in Service Order No. 910, that being the only change involved when a corrected version was issued after the court stayed the order. The sentence also appears in Orders 911, 912 and 913. It was explained at the commission that the sentence, which (Continued on page 10)

# RAILWAY MARKET OUTLOOK THIS WEEK

# a RAILWAY AGE Workbook Page

Loadings Up.—Loadings of revenue freight in the week ended April 14 totaled 742,053 cars, the Association of American Railroads announced on April 19. This was an increase of 56,656 cars, or 8.3%, compared with the previous week; an increase of 71,749 cars, or 10.7%, compared with the corresponding week last year; and an increase of 129,169 cars, or 21.4%, compared with the equivalent 1954 week.

Loadings of revenue freight for the week ended April 7 totaled 685,-397 cars; the summary, compiled by the Car Service Division, AAR, follows:

### REVENUE FREIGHT CAR LOADINGS

For the week	ended S	aturday, A	oril 7
District	1956	1955	1954
Eastern Alleghany Pocahontas Southern Northwestern Central Western Southwestern	118,507 140,588 53,855 126,533 74,026 115,274 56,614	118,004 133,802 56,448 108,480 73,235 113,479 55,769	108,566 114,920 44,644 116,999 67,614 99,986 54,061
Districts	245,914	242,483	221,661
Total All Roads	685,397	659,217	606,790
Commodities: Grain and grain products Livestock Coal Coke Forest Products Ore Merchandise I.c.I. Miscellaneous	45,946 7,217 118,467 12,755 43,166 25,546 61,783 370,517	40,334 7,024 109,376 11,225 40,765 19,613 61,753 369,127	39,425 7,632 97,098 7,855 39,126 14,348 64,015 337,291
April 7 March 31 March 24 March 17 March 10	685,397 724,944 697,248 685,985 697,601	659,217 654,761 634,628 650,924 662,283	606,790 599,302 601,414 609,959 609,937
Cumulative total, 14 weeks 9	,665,598	8,975,927	8,569,229

In Canada.—Carloadings for the ten-day period ended March 31 totaled 98,522 cars, compared with 74,723 cars for the previous seven-

day period, according to the Dominion Bureau of Statistics.

	Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
March 31, 1956 March 31, 1955	98,522 103,861	49,574 46,025
Cumulative Totals:	100,001	40,023
March 31, 1956 March 31, 1955	964,700 860,781	449,972 400,320
		400,020

### New Equipment

#### FREIGHT CARS

▶ March Deliveries Highest Since November '53.—Deliveries in March totaled 5,949, highest since November 1953, when 6,137 cars were delivered, the ARCI and AAR report; February deliveries totaled 4,881, while in March 1955 only 2,833 cars were delivered; orders continued to decline, totaling 1,618 in March, compared with 1,675 in February and 2,156 in March 1955; April 1 backlog was 137,070, compared with 141,437 cars on March 1 and 17,974 on April 1, 1955.

	Ordered	Delivered	On Order
Туре	Mar. '56	Mar. '56	April 1, '56
Box-Plain	900	2,361	57,295
Box-Auto	0	0	2,100
Flat	58	129	5,621
Gondola	247	329	12,811
Hopper	6	1,815	39,951
Covered Hopper	50	561	4,994
Refrigerator	0	140	4,996
Stock	0	114	0
Tank	347	377	7,696
Caboose	0	10	246
Other	10	113	1,360
TOTAL	1,618	5,949	137,070
Car Builders	1,490	4,326	63,199
Company Shops	128	1,623	73,871

► Fewer Cars Await Repairs.—Class I roads had 75,588 cars, of total ownership of 1,696,259, awaiting repairs March 1—a drop of 48,085 bad order cars from same 1955 date, the AAR reports; report is summarized below:

	Mar. 1, 1956	Mar. 1, 1955	Change
Ownership*	1,696,259	1,729,939	33,680 (d)
Waiting Repairs	75,588	123,673	48,085 (d)
Repair Ratio	4.5%	7.1%	2.6% (d)
*Excludes railroad-owned private refri	gerator cars.		

#### LOCOMOTIVES

▶ Diesel Ownership Still Rising.—Diesel-electric units owned or leased by Class I roads totaled 25,166 on March 1, an increase of 1,190 over March 1, 1955, and 112 more than were owned February 1, 1956, the AAR reports; the 2,511 decline in steam locomotives owned, from March 1, 1955 to March 1, 1956, was accompanied by drop of 1,442 steam locomotives listed by AAR as "stored service-able."

		or Leased rch 1		Serviceable arch 1	-	Repairs
	1956	1955	1956	1955	1956	1955
Diesel (A & B units)	25,166	23,976	27	80	997	1,077
Steam (locomotives)	5,559	8,070	869	2,311	1,069	1,298
Flectric (units)	631	654	13	12	74	97

### PASSENGER CARS

Northern Pacific.—Ordered one rail diesel car (RDC-3), Budd Company, for service between Duluth, Minn., and Staple; cost approximately \$170,000; delivery expected next October.

(Continued from page 8)

will hereafter appear in all service orders, was not considered necessary to make the orders legal; it was added to point up the fact that they arise out of emergency conditions.

The court order was a temporary restraining order issued by Judge William G. East of the federal district court for the District of Oregon.

While the ICC order applies to delaying tactics with respect to all carload freight (Railway Age, Mar. 26, p. 11), the commission's main purpose was to end slow movements of lumber; and it was lumber shippers who appealed to the court, and to the commission for the reconsideration it denied.

The commission also refused to postpone the order's effective date of April 9, but its report announced that no action would be taken to enforce the order until further order of the commission. "As a practical matter," the commission conceded, the effective date "has already been postponed" by the court order. The petition which the commission de-

nied was filed by the Digger Mountain Lumber Company.

The commission's first reaction was that the petitioner was not legally entitled to file the petition, because Service Order No. 910 is directed only to railroads. The commission did not stop to resolve that question, however, but proceeded to set forth the reasons which led it to issue the order.

Car Shortages—It referred to "recurring" car shortages of recent years, and to its "serious concern" about them. It noted that it has issued many service orders designed to compel more efficient utilization of cars, and that it is sponsoring legislation which would give it authority to impose penalty per diem charges and thus use the freight-carrental rate as an instrument to promote prompt movement of cars.

The commission's prediction that this year's car shortage will be greater than that of 1955 was based on current indications. "At this time of year," it said, "Class I railroads normally have a surplus of 30,000 to 50,000 freight cars. This year,

however, railroads are already experiencing a shortage of over 5,000 cars daily."

To illustrate what it had in mind by "deliberate delay in the movement of loaded freight cars," the commission referred, "for example," to arrangements which permit shippers "to load lumber which has not been sold and to search for buyers while the lumber is in transit." Provisions of the order were likened to demurrage rules, which, as the commission put it, "are designed to prevent a shipper from keeping freight cars on his own siding for storage purposes." The report added:

"We think it is obvious that our power under section 1(15) to make just and reasonable directions with respect to car service may be employed to prevent diversion of freight cars from transportation to storage purposes on the lines of the railroads, and that it is our duty to exercise that power, under existing circumstances."

Bill of Particulars-The commission went on to report on checks made by its service agents which "graphically illustrate the wastage of freight cars through deliberate delay and circuitous routing." One report covered 1,014 cars of lumber checked at Council Bluffs, Iowa, to which they had been moved by the Union Pacific, between September 26, 1955, and February 20, 1956. These cars consumed 29,621 days en route between origin points in the Pacific Northwest and Council Bluffs and were held at Council Bluffs 12,894 days before they were forwarded to ultimate destinations. Thus, the commission calculated, the cars "were en route an average of 29.2 days and were delayed at Council Bluffs to await forwarding instructions an average of 12.7 additional days."

This report, and like reports of other checks at Council Bluffs, prompted the commission to make this statement: "Such delays . . . are neither normal nor accidental, as shown by Union Pacific's instruction to its operating forces that 'To compete with competitive lines and to satisfy shippers and brokers, arrange to consume 14 days from departure Ogden to arrival Council Bluffs.'"

Another check showed that 70 cars were en route from Spokane, Wash., to Minneapolis, Minn., an average of 21 days, while 11 cars moving be-



### Radio Boosts Efficiency of Pick-Up and Delivery

Burlington Truck Lines, Inc., has equipped its 75 trucks and tractors with two-way radio, enabling the Cicero freighthouse dispatcher to keep "in touch" with his drivers making deliveries and pickups in the greater Chicago area. The base radio station, atop the Burlington's downtown office building, is remotely controlled by the dispatcher. It is now routine for truck and tractor drivers to radio the dispatcher in the morning on their way from the garage to the freighthouse.

They continue to radio check with the dispatcher during the day. Shippers telephone the dispatcher about rush service, and he immediately radios the nearest truck to make the pick-up. According to Warren F. Wheeler, assistant general manager, the mobile radio dispatching system "has boosted our efficiency, on pick-ups made the same day, to 98%; and it provides substantial support for the freight sales efforts of the Burlington railroad."

tween the same points on "regular schedules" were en route an average of only 7.3 days. Moreover, the 70 cars were held at Minneapolis an average of eight days per car awaiting forwarding instructions.

The commission's service agents also reported that "operating forces of the Denver & Rio Grande Western have instructions that lumber received from the Southern Pacific at Ogden and the Western Pacific at Salt Lake City will be held at Grand Junction, Colo., for slow movement." The agents also checked Missouri Pacific records, turning up a showing that "cars of lumber consumed 12 to 19 days in transit between Oregon and California to St. Louis, with cars being held from 28 to 60 days at St. Louis for reconsignment."

Circuitous Routing—As an example of cars given circuitous routing "to delay movement," the commission cited a report by one of its agents who traced the route on some cars of lumber billed from Grants Pass, Ore., to Dallas, Texas. The cars moved Southern Pacific to El Paso, Texas & New Orleans to San Antonio, Missouri Pacific to Harlingen, T&NO to Dallas.

ADEL

OADEL

OAD

#### Microwave in the South

Three Southern subsidiaries — the Georgia Southern & Florida, the South Georgia, and the Live Oak, Perry & Gulf—have received Federal Communications Commission approval for construction of a microwave system to provide telephone and printing telegraph communications between seven railroad offices (see map). According to the FCC, this is the first shared usage of microwave in the railroad industry.

"Harlingen," the commission said, "is approximately 260 miles south of San Antonio, and by routing via Harlingen, shipments move 500 miles out of route and consume an average of three to six days in movement from San Antonio to Dallas via Harlingen. The normal route from San Antonio to Dallas would require not over one day en route."

"Similar practices and conditions were found to exist on the Chicago & North Western, Rock Island, Burlington and Wabash lines," the commission also said. It went on to assert that these practices in time of car shortage called for exercise of its emergency car service power by issuance of Order 910 "without notice, hearing, or the filing of a report."

The order, the commission added, "remains subject to our continuous scrutiny," and "we will receive and consider views and information as to its effectiveness in promoting more efficient and equitable utilization of freight cars."

### **Russia Plans Motive-Power Switch**

All future Russian motive power will be electric, diesel or gas turbine.

What the USSR is doing to improve its railroad motive power is outlined in a recent report by A. Seredin, "chief engineer in the main office for railroading." According to Mr. Seredin, the need for replacing steam power has been felt for a long time, but diesel and electric locomotives have been introduced only slowly.

Need for better power is particularly acute in the coal districts. Daily average mileage of locomotives is reported as 370, and it is expected that diesel and electric locomotives will be able considerably to increase these mileages without double heading. It is expected that new motive power will increase traffic capacity of some lines by one and one-half to two and one-half times, and that fuel, water and maintenance costs will be greatly reduced.

Conversion Costs—Cost of converting from steam to electric power, is estimated as \$280,000 per mile of double-track, while conversion to diesel operation is given as \$20,000 per mile. Diesel locomotives for switching even in electrified zones are recommended, their availability being given as 95%, with ten-day periods between inspections. Construction of steam locomotives will be completely discontinued in 1957

Construction of the type TE-2 diesel locomotive now in service has been discontinued. It will be replaced by type TE-3, which employs a 10-cylinder, 2-cycle engine rated 2,000 hp. It has a maximum speed of 62 mph in freight service, and, with different gearing, 75 mph in passen-

ger service. It is also planned to increase horsepower output of the TE-3 to 3,000 by supercharging and increasing the cylinders from 10 to 12.

There will also be switching locomotives of 400, 700 and 800 hp, without hydro-mechanical transmission. Work is being continued on gas-generator diesel locomotives, a test unit of which is already in operation. Mr. Seredin also refers to work being done on creation of a gas turbine locomotive with electric transmission. A thermal efficiency of 12 to 18% is anticipated.

Electrified lines are now using a type UL-22M electric locomotive rated at 3,200 hp. Its maximum speed is only 47 mph, and construction has been started on a 5,700-hp electric locomotive. It has eight driving axles and a top speed of 56 mph. One locomotive plant is designing a passenger locomotive to operate at speeds up to 100 mph.

Single-phase a-c power at commercial frequency is being considered as a means of simplifying the power supply system and reducing costs.

Five-Year Plan—Under a 5-year plan, Mr. Seredin states, rolling stock for commuter traffic also will be improved. The Riga plant built experimental three-car m-u units in 1955 which attained speeds of 80 mph, compared with the customary 53 mph.

However, Mr. Seredin adds, the motor-car train still has defects. Its weight is too high and its acceleration inadequate.

Mr. Seredin pointed out that when steam operation was being replaced abroad by diesel and electric traction, traffic on railway lines of those countries was already stable or declining. In the Soviet Union, however, new types of traction are being installed while there is a constant increase in freight traffic. This fact, he says, requires more decisive and rapid action, and complicates the work.

For diesel and electric locomotives, Mr. Seredin says, there must be shops and departments which do not exist on steam operated lines. All these departments must be newly established and new facilities must be built. A list of required facilities, approximately duplicating those used in American shops, is included in his report. Mr. Seredin says: "Our experience in converting from steam to diesel or electric traction shows that one main obstacle is always that repair work shops and rigging-up places have not been sufficiently prepared for the new operation."

hensive way," Mr. Wright concluded. "If we shippers can help, we ought to by bringing our viewpoint to bear. We're going to benefit from any constructive efforts by railroads, so any help we can give them ought to be forthcoming. After all, the seaway is coming, and in a few years, and I see no reason why railroads and shippers shouldn't regard its advent wholesomely."

### **Board to Help RRs Benefit from Seaway**

A permanent St. Lawrence Seaway Committee will be named by the Great Lakes Regional Advisory board at its June meeting in Buffalo to formulate plans to help railroads serving the district obtain greatest benefit from the waterway.

Proposal for such a committee was advanced at the board's March 27-28 meeting in Toledo, Ohio, by its president, Karl S. Wright, general traffic manager of the Carborundum Com-

pany.

Mr. Wright said railroads in the Lakes district stand to benefit much from import and export traffic diverted by the seaway from East coast ports, and by the change in traffic pattern involving greater traffic between seaway-lake ports and southwestern areas of the country.

More Benefits—"The railroads can benefit in many other ways," Mr. Wright added. "They have much near-swamp land held for industrial development, that now can be used as port sites, and considerable water frontage in Lake port towns that will be invaluable for docks and warehouses. Also, there's no reason why they can't go into the warehouse business, another source of revenue and profit for them, or can't profitably join in warehousing, an important traffic and profit factor in winter months when seaway and lakes traffic is halted."

"Other factors need study by rails and shippers—changes in freight rates, establishment of inland customs offices and the possibility of cheaper movement of truck trailers via ship between Lake and East coast and Gulf ports than via highway."

"I'm not implying that railroads have a defeatist attitude as regards the seaway's coming, but I wonder if they're looking at it in a compre-

### Positions Open as ICC Tariff Examiner

The U.S. Civil Service Commission will accept applications through May 8 for jobs as Transportation Tariff Examiner (Freight) with the

ICC at Washington.

The jobs pay \$4,525 a year. Applicants must pass a written test and have had appropriate experience, or a combination of some experience and pertinent college study. Information and application forms are available at local post offices or from the Civil Service Commission, Washington 25, D.C.

### NYC "Aerotrain" Begins Revenue Service April 29

The New York Central's "Aerotrain" will begin regular Chicago-Detroit non-stop service April 29. The train, to be called "Great Lakes Aerotrain," will operate on a four hour, 20 min schedule for 90 days, after which it will make trial runs on another railroad.

The train is scheduled to leave Chicago's 12th Street Station at 8 a.m., Chicago daylight time, and arrive in Detroit at 12:20 p.m., Eastern standard time. It will leave Detroit at 6:30 p.m. (EST), and reach Chicago's 12th Street Station at 10:50 p.m. (CDT).

Regular coach fares will apply and seats will not be reserved. A dining facility will provide a "Cruisin' Susan" mobile service of fruit juices, sweet rolls, coffee and milk.

### 11-Road Control of IT Approved by the ICC

The Interstate Commerce Commission has authorized 10 railroads to acquire joint control of the properties of the Illinois Terminal. The authorization is subject to several conditions, including one stipulating that the 10 roads must permit the



### Steamer Waits for the Highball

Canadian National No. 6212, said to be the largest steam locomotive in regular New England passenger service, is shown here at White River Junction, VI., waiting to start hauling the "Montrealer" 183 miles over the Central Vermont to Montreal. The 300-ton locomotive makes a round trip every night between Montreal and White River Junction. New York Central to participate on equal terms with themselves if the commission later approves an NYC application for such participation.

Under the acquisition plan, IT's properties and assets will be purchased by the Illinois-Missouri Terminal, a new corporation organized for that purpose. The participating roads control I-MT. The 10 now involved are: Baltimore & Ohio, Chicago & Eastern Illinois, Burlington, Rock Island, Gulf, Mobile & Ohio, Litchfield & Madison, Nickel Plate, Frisco, Wabash, and Illinois Central.

As to NYC, Alleghany Corporation joined in that road's application to participate. Thus the commission withheld action pending the outcome of current court proceedings on the question of whether Alleghany is subject to the ICC or the Securities & Exchange Commission.

IT properties include 355 miles of line, principally between St. Louis and East Peoria, Champaign. They also include the McKinley Bridge, which spans the Mississippi river between St. Louis and Venice and

which serves both rail and highway traffic.

I-MT will pay \$20,015,635 for the properties, and it plans to raise \$13,500,000 of that amount by selling McKinley Bridge to a joint Illinois-Missouri authority, from which it would obtain rights to use the bridge's rail facilities. The remaining \$6,515,635 would then be borrowed from the Mercantile Trust Company of St. Louis on a note. If the bridge is not sold, the entire \$20,015,635 will be borrowed from Mercantile.

The commission's action as to financing authorizes I-MT to issue a promissory note in an amount not exceeding \$20,015,635, and to assume obligation for \$1,718,000 of IT equipment trust certificates. It also authorizes I-MT's proprietary roads to assume liability as guarantors of the note. Other approved financing is the issuance by I-MT of \$20,000 of common stock, consisting of 2,000 shares of par value of \$10 each.

Conditions imposed by the commission, in addition to that permiting participation by NYC, are designed to keep open all traffic routes participated in by IT and to continue "the present neutrality of handling traffic."

### **Diesel Fuel-Cost Showing Dropped**

While the showing was less favorable than their 1954 record, dieselelectric freight locomotives last year produced 66% more gross tonmiles per dollar of fuel expense than coal-burning steam locomotives. In 1954 each dollar spent for diesel fuel produced 80% more gross ton-miles than the coal-buying dollar.

This comparison was made in "Transport Economics," publication of the Bureau of Transport Economics and Statistics of the ICC.

The figures also showed that 1955's diesel-fuel dollar produced about 85% more gross ton-miles than each dollar spent last year for current for electric locomotives. A dollar spent for fuel for oil-burning steam locomotives produced less than half as many gross ton-miles as the diesel-fuel dollar.

The 1955 figures for diesels showed that they produced 5,496 gross ton-miles per dollar of fuel expense. That compared with 3,310 gross ton-miles for coal-burning steam locomotives, 2,038 gross ton-miles for oil burners, and 2,969 gross ton-miles for electrics. All of these were higher than comparable figures for 1954. Meanwhile, unit costs for all fuels were down, except for a 2.04% rise in the per-barrel cost of fuel oil. The per-gallon cost of diesel fuel was down 1.6%, and coal and electric current costs per ton and per kilowatt hour, respectively, were down 0.37% and 2.36%.

The bureau's figures also showed that diesels last year accounted for 85.52% of the gross ton-miles of freight service performed by Class I railroads. That compared with 84.47% in 1954. The coal burner's share was down from 11.62% to 10.72%. Oil burning steam locomotives and electrics each accounted for less than 2% of 1955 freight service.



Swedish State Railways

### **Ducats for Moppets**

"From Home to Away and Return" is how this tyke's ticket for travel on Swedish State Railways reads. There's no charge for children under six, but it gives a little tot such a grown-up feeling to have a conductor punch her ticket—just like the big folks'. Gaily illustrated with nursery rhymes, "kids' tix" are good any time and on all trains—even if the seat reserved is sometimes on a parent's lap.

### **IC Suburban Fare Boost Suspended**

The Illinois Commerce Commission has suspended, until August 14, a proposed 36% increase in Illinois Central suburban fares. The IC had requested that the new fare schedule take effect April 16. Without the fare hike, the IC estimates it will lose \$535,000 on commuter service this

Following the Illinois Commission's suspension, the Illinois Central asked the Interstate Commerce Commission to permit the increase, claiming that a failure to do so would constitute unfair discrimination against,

and a burden to, interstate com-

Meanwhile, the Interstate Commerce Commission has granted the Milwaukee a 20% increase in its Chicago suburban fares, effective April 20. The Illinois Commission turned down the road's original application filed in 1952, and the Milwaukee then appealed to the Interstate Commission for 13th section relief in February 1955 (Railway Age, Feb. 21, 1955, p. 10).

In a third Chicago suburban fare (Continued on page 34)

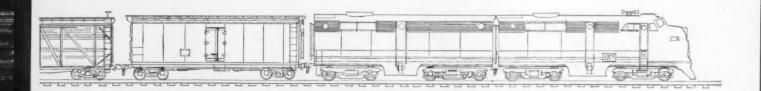


Buy Griffin EQS

# FOR LONGER FLANGE AND TREAD WEAR!

The Griffin grain structure on tread and flange is at right angles to the rail—giving you a longer-lasting wheel.

Because of advanced casting methods . . . pressure pouring in machined graphite molds . . . the roundness of the Griffin EQS is practically perfect as cast. Absolutely no tread machining is necessary. The toughest metal *stays* where it reduces your costs . . . at the point of contact with the rail!



# GRASSIVE EQS

Griffin Wheel Company

445 N. Sacramento Blvd., Chicago 12

Plants strategically located to serve all railroads





Give the "green" to GRIFFIN and watch your costs go down!

### Questions and

Of current interest

### **Answers**

to the Transportation Department

Here are the answers to another Railway Age Car Service "Quiz."

### THE PROBLEM-as presented in the March 12 issue:

Only 15 Class A box cars were available for shipping sugar from Billings, Mont., to the following destinations:

Akron, Ohio	Montreal, Que.
Atlanta, Ga.	Oklahoma City,
	Okla.
Detroit, Mich.	Omaha, Neb.
Dallas, Tex.	Pueblo, Colo.
Fargo, N. D.	St. Paul, Minn.
Fort Wayne, Ind.	
Little Rock, Ark.	Shreveport, La.
Madison, Wis.	Tucson, Ariz.

Ownerships represented in the available cars were:

AT&SF	ITC
C&WC	KCS
C&NW	M&StL
CRR	SP
C&S	Soo Line
EJ&E	UP
FW&D	WP
GN	

To which destination was each of these cars loaded? Which paragraphs of Car Service Rules 2 or 3 were the "authority" for these loadings?

CONDUCTED By G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.

### The Answers-

The Burlington conductor and his friend the loading supervisor matched up cars and destinations as follows:

Destination	Car Used	Rule Applied		
Akron, Ohio	ITC	2-C-3		
Atlanta, Ga.	C&WC	3-A-5		
Detroit, Mich.	EJ&E	2-C-3		
Dallas, Tex.	C&S	2-C-1		
Fargo, N. D.	GN	2-B		
Fort Wayne, Ind.	CRR	3-A-5		
Little Rock, Ark.	KCS	2-C-3		
Madison, Wis.	CNW	2-C-1		
Montreal, Que.	Soo Line	2-C-1		
Oklahoma City, Okla.	AT&SF	2-C-1		
Omaha, Neb.	UP	2-C-2		
Pueblo, Colo.	WP	3-A-5		
St. Paul, Minn.	M&StL	2-C-2		
Shreveport, La.	FW&D	3-A-5		
Tucson, Ariz.	SP	3-A-1		

Only 19 persons answered this "quiz" correctly up to closing time for this issue, although the return has been relatively small. And not too many people gave the rule applied in making their selections.

Some who replied didn't give exactly the same answers we've picked as the best ones. Nevertheless, we gave you credit if your solutions were OK under the car service rules. Our answers, we think, are better because they place the cars nearer a junction with the home road. This we consider important and therefore desirable, because it cuts empty mileage and delay time.

For example, while we think our solution is best, we consider the answer correct if the CRR, ITC and EJ&E cars were sent to Akron, Detroit and Fort Wayne, respectively. Incidentally, the SP car should not have been sent to Shreveport. This was a fairly frequent mistake. SP cars are not at home in that district.

Maybe the next column will have some more names of people with the right answers. The names of those sending in the correct answers are as follows:

Ernest A. Abrams, relief clerk, Erie, Newark, N. J.

Carl Blaubach, Los Angeles, Calif.

Frank A. Brady, chief clerk, Erie, Croxton yard, N. J.

C. R. Detrick, agent, Erie, Belleville, N. J.
C. Dummick, rate clerk, Erie, Paterson, N. J.
E. J. Garafano, agent, Erie, Nutley, N. J.
W. C. Harbourne, agent, Erie, Newark,

W. J. Henley, chief clerk, Erie, Newark,

J. G. Hoskinson, clerk, Baltimore & Ohio, Akron, Ohio

Ruth E. Larivee, stenographer, Erie, Jersey City, N. J.

P. McKnett, agent, Pennsylvania, Cambridge, Md.

F. F. Moniat, demurrage clerk, Erie, Newark, N. J.

W. J. Moynihan, clerk, Erie, Newark, N. J. T. C. Rooney, chief car distributor, Erie, Jersey City, N. J.

F. J. Smith, assistant to superintendent transportation, American Refrigerator Transit Company, St. Louis, Mo.

Ralph J. Staunton, Jr., transportation rate expert, California Public Utilities Commission, San Gabriel, Calif.

L. J. Vernol, chief clerk, Erie, Newburgh, N. Y.

C. A. Welch, clerk, Erie, Newburgh, N. Y. H. L. Wood, agent, Erie, Newburgh, N. Y. NOW YOUR BEST BOX CAR BUY

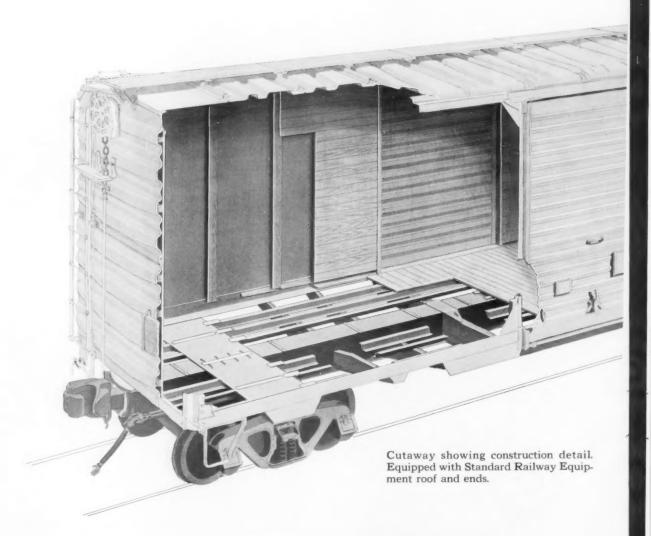
# OCC "PRODUCTION DESIGN" BOX GARS

- IMPACT-PROOF CONSTRUCTION
- 87.2 EXTRA CUBIC FEET OF REVENUE CAPACITY PER CAR (50 ft. car)
- LOWER INITIAL INVESTMENT
- REDUCED MAINTENANCE COSTS
- GREATER PROTECTION TO LADING
- LONGER SERVICE LIFE

# PROVEN ///PAGT-PROOF CONSTRUCTION

assures greater protection to lading...

longer car life!



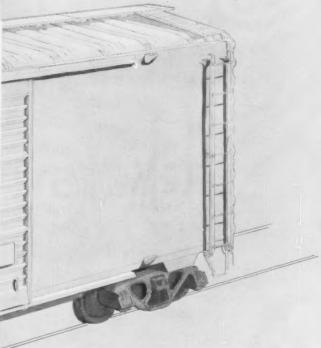
QCf PRODUCTION

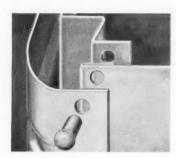
**BOX CARS** 



Exclusive! ATTACHMENT OF BOL-STER COVERPLATE TO CENTER SILL. Tests have proved the most vulnerable point is the attachment of cover plate to center sill and stringer attachments by edge welding. To eliminate this weakness, slots in the top and bottom cover plates permit attachment to the center sill with fillet welds at each side to prevent lateral buckling of the cover plate. Welding of cover plate to diaphragm webs also prevents buckles along length of cover plate.







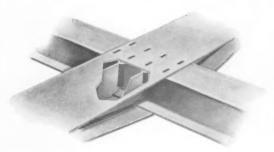
## Exclusive! END SIDE SHEET DESIGN.

Impact tests prove the design advantage of bending the side sheet back on itself to give double thickness reinforcement to counteract the tendency of rivets to tear slots in the side sheet when forces hit the end of the car.



Exclusive! FLOOR STRINGER AT-

TACHMENT. For greater stamina under impact with all types of loads, rolled Zee bars on either side of the center sill, extend from bolster to bolster and from bolster to end sill. Ends of stringers fit under bolster cover plates and end sills are secured by welding to these members and all intervening cross-members. Tie plates are also welded to top of the stringers and bolster top cover plate.



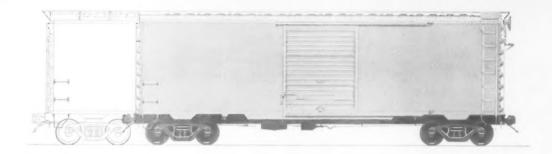
Exclusive! INSIDE AND OUTSIDE

WELDS AT BOLSTER. The location to two web plates each side of the center sill extended to the side sill reinforcement, permits fillet welds both inside and outside at the center sill for maximum strength.



# Exclusive! SIDE SILL REINFORCE.

MENT. For greater strength at door openings, heavier sill reinforcements are riveted to each side sill under the door opening.



# QCf PRODUCTION DESIGN BOX CAR PER DOLLAR'

**QCf** has evolved the "Production Design" Box Car by working in close cooperation with the AAR and individual Railroads, and drawing on exclusive data compiled through years of research by **QCf** Research and Development Department. Tested and retested, all design features are based upon car service records and a careful analysis of shipping trends.

Lower initial cost with increased capacity, coupled with outstanding stamina to greatly reduce maintenance costs and operating expenses, make the <code>QCf</code> "Production Design" Box Car ideal—for both present and future transportation needs.

For Specifications and Prices on  $\mathbf{QCf}$  "Production Design" Box Cars (in 40' and 50' lengths)...see your  $\mathbf{QCf}$  Representative, or write:

# acf

AMERICAN CAR AND FOUNDRY DIVISION

QCf Industries, Incorporated

Sales Offices: New York • Chicago • St. Louis • Cleveland • Philadelphia • Washington • San Francisco
Plants: Berwick, Pa. • Milton, Pa. • Huntington, W. Va. • St. Louis, Mo. • St. Charles, Mo.



THE CASE HISTORY—Two Crane 250-pound iron body angle valves—6-inch (shown) and 5-inch size—scored this exceptional service record.

They were installed in 1915 on the main steam leads from boilers in the plant at Delavan, Wis., now occupied by The George W. Borg Corporation. In 40 years' uninterrupted service these Crane valves never failed to operate properly nor caused a shutdown. With but routine maintenance, they opened fully and were seated tight with ease under infrequent operation. Working pressure of boilers was originally 150 psi.—later reduced to 75 psi. This year, both valves were retired. The new replacements are Crane quality valves, of course.

Crane iron valves in particular need no introduction to thrifty buyers. In all grades, Crane iron castings generously exceed the requirements of equivalent A.S.T.M.

specifications. Crane Ferrosteel, for instance, used in 250-pound valves is 35% stronger than ordinary cast iron.

In any pressure class, you'll find Crane quality outstanding. Choose from complete lines of gates, globes, angles and checks.

Your Crane Representative can give valuable help in specifying and ordering.

# CRANE VALVES & FITTINGS

PIPE . KITCHENS . PLUMBING . HEATING

Since 1855-Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas



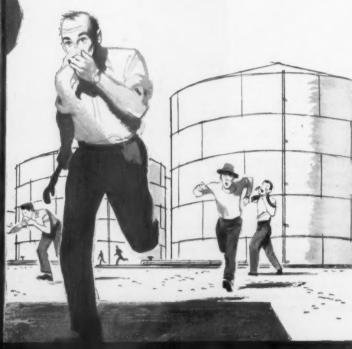
## "Nitric Acid leaking we need help fast."

A General American District Manager got this message. One of his customers was in trouble. A 50,000-gallon tank of concentrated nitric acid had sprung a leak. The acid would be lost ... property would be damaged ... lives might be endangered. Fast action was imperative!

Nitric acid? That called for stainless steel tank cars. Where were the nearest ones? Find them... explain the situation. Call the railroad. Have a special train made up. Pick up the cars and highball to the trouble spot. Above all, hurry.

Within hours, the GATX stainless steel cars were at the plant, the acid was transferred to the cars and the storage tank repaired with a minimum of loss.

Unusual? Of course... but unusual service is one of the many benefits offered to lessees of GATX tank cars. There are over 48,000 cars in the GATX fleet... over 200 different types... available for your use without capital investment. To keep this fleet rolling, General American maintains a nation-wide network of district offices and shops that provide service on a 24-hour basis. That's why, when it comes to dependability, it pays to plan with General American.





GENERAL AMERICAN TRANSPORTATION CORPORATION

135 South LaSalle Street · Chicago 90, Illinois



# Market-Wise Rates Are Everybody's Business

There is a strong, but demonstrably mistaken, belief on the part of some railroad men that the skillful pricing of railroad service is one of those highly technical problems that should be referred to the traffic department, and ignored by everybody else. Even within the traffic department itself, there are some who believe that pricing is the job of the rate men—and no proper concern of other traffic department people. With this attitude of mind around, it's no wonder that progress is as leisurely as it is in solving this most basic and most acute of all railroad problems.

### When Amateurs Are Needed

Under normal conditions in most cities the inhabitants are not much concerned when a fire breaks out. They go about their customary affairs in the accurate belief that the city's fire department will deal with the situation swiftly and efficiently. The invasion of the scene of the fire by a lot of amateur fire-fighters would do more harm than good.

But suppose there is a really big conflagration—far beyond the capacity of regular fire-fighting forces to control. Then the assistance of a lot of semi-skilled, or even unskilled amateurs—instead of being a nuisance—would be heartily welcome.

The alarming erosion of railroad freight traffic—from 66 per cent of total ton-miles in 1947 to less than 50 per cent today—certainly gives ample evidence that a major crisis is occurring, meriting the concern and assistance of amateurs, and not solely that of the professional specialists in dealing with rate questions.

As a matter of fact, so many urgent new rate questions have arisen within such a short space of time that, even if the traffic department were staffed by supermen, they would have their hands full.

A further reason why railroad men outside the traffic department should inform themselves about rate questions is for the purpose of improving their morale. There are some railroad men who tend to be disheartened by the loss of traffic. They would quickly get over their blues if they would take the trouble to inform themselves of the facts—namely, that the railroads haven't lost a bit of their economic and technological superiority over their rivals for most of the traffic that has been lost. The loss has come about simply because these rivals—being mostly unregulated—have adapted their prices

and services to the market more quickly and accurately than the railroads have.

There is nothing whatever in this situation which brains, vigorous figure work, courage and persistence cannot correct. But having these qualities in operation only in the traffic department will not be sufficient. This is not one of those narrow technical problems which can be turned over to the specialists with "business as usual" for everybody else. On the contrary, we have here one of those once-in-a-century crises which calls for all-out participation by practically everybody.

Some of these rate problems (e.g., whether it is possible, practicable or sound to retain "traditional differentials") are of such crucial importance that chief executives can hardly avoid being involved in their solution.

The more these executives inform themselves about the economic forces at work in this area, the more likely it will be that their policy decisions will conform to economic facts.

Then, take the accounting department. Accounting people have a most vital role in the successful surmounting of this crisis—because (as all who have studied the problem at close range are aware) a large part of the answer lies in better knowledge by railroad people of their own and their rivals' costs. There isn't an accounting department employee endowed with curiosity, imagination, a good mind and a sharp pencil who cannot—if he will—contribute importantly toward increasing the railroads' competitive strength.

The law department is, of course, in the center of the situation because, since the railroads are strictly regulated, legally practicable means must be found for all the changes in pricing practices that the railroads find it necessary to make.

The operating, mechanical, engineering and purchasing departments are likewise deeply involved—because it is their performance which determines both the quality of service provided for customers, and the basic costs of that service. The higher the quality of the service they provide and the lower their costs—the more ammunition they supply to the traffic and rate men to work with in attracting new business.

### Reasons for Reassurance

The railroads are, by nature, a mass production industry with all the technological and economic advantages inherent in this method of production. All they need in order to enjoy the same prosperity and growth that other mass production industries (e.g., automobiles or steel) are enjoying is skillful adjustment of their services and prices to fit the market. But this adjustment is much too big a job to be shouldered off on a few hundred or even a few thousand traffic people.

It is a job big enough to call for some contribution from every man on the railroads' payroll who is endowed with a normal IQ and an average quota of imagination and curiosity.



ON THE FRISCO

# **Do-It-Yourself Grading Pays Off**

Take a ride over any part of the Frisco and you are almost certain to see some grading equipment at work. What you would see if you rode over the entire railroad would add up to a sizable fleet. And, except for very large grading jobs, the equipment seen would be companyowned. To be exact, the road owns \$925,000 worth of such equipment, and it is paying dividends in the form of low unit costs.

To understand why this road has purchased so much grading equipment it is necessary to go back to World War II when the railroads had many industry tracks to build. The Frisco was no exception but it found that frequently new track construction was held up for necessary grading. At that time grading contractors had no trouble in keeping employed and they could pick and

choose their jobs. The Frisco found that it was difficult enough to obtain grading contractors for new track construction, but it was practically impossible to get any contractor to do the needed maintenance grading. To cope with this situation, the road began to acquire its own earth-moving equipment.

As maintenance conditions demanded them, more units were added year by year. Because it was available, the road began using this equipment for small construction projects and found that ordinarily the costs ran less than when the same work was done under contract. Following this procedure, the Frisco built up its grading fleet to the point where it now is large enough to do all but the larger construction jobs. The grading equipment now owned by the Frisco, as well as the work

to which it may be assigned, are shown in the tabulations—page 27.

This sizable fleet of equipment not only enables the road to carry out the major portion of its maintenance grading but also much of the earthmoving work required by the construction projects. And, because of the favorable climatic conditions prevailing in Frisco territory, the equipment can be kept busy on a year-round basis, resulting in its maximum utilization and full employment of the operators.

### AFE's Given Preference

The tasks performed by these machines cover almost every conceivable grading operation and frequently the handling of bulk commodities such as sand and stone. They also assist in picking up mate-



OFF-TRACK units, working both at the top and bottom of the bluff, coordinate their efforts while loading bridge-filling material into air-dump cars.



ON-TRACK equipment, advantageous for hauling large yardages for long distances, is filling a portion of the Canadian River bridge near St. Thomas, Okla.



EXCAVATORS were converted into cranes for assisting in the laying of seven lines of 108-in culvert pipe.

# in Low Unit Costs

rial scattered at derailments. In general, the handling of AFE work is given preference over maintenance work as these jobs produce the greatest return on the investment and frequently they are more urgent because their purpose is to increase railroad business. For instance, the construction of an industry track will be given preferred attention so as to accommodate a shipper and get him into operation as quickly as possible. Between AFE projects there are plenty of maintenance grading jobs, such as bank restoration and ditch cleaning, to keep the equipment busy.

Unlike most roads the Frisco

Short Industry Tracks—10¢ per yard

Siding Extensions—20¢ per yard

Spurs and Line Changes—25¢ per yard

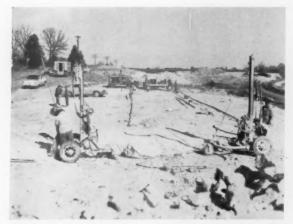
Ro:k Excavation—\$1.50 per yard

Bridge Filling—15 to 30¢ per yard

Bank Restoration—8¢ per yard



BANK RESTORATION is necessary before surfacing work to retain ballast. Ditches also get cleaned.



ROCK EXCAVATION is often necessary when making line changes and calls for wagon drills and compressors.



THIS CUT, 25 ft deep, is being excavated by a 2-yd shovel which keeps three Dumptor trucks busy.

### DO-IT-YOURSELF GRADING PAYS OFF

does not have an annual AFE budget; instead, improvement jobs are approved currently by the vice-president of operations. As soon as a project that requires grading is approved, the division engineer gets in touch with the roadway engineer, F. N. Beighley, who is in charge of the earthmoving equipment. Plans are made for the handling of any excavation, embankment or ditching work involved, and the job item is added to the equipment work-assignment list maintained currently by Mr. Beighley.

In general, this work-assignment schedule is followed, but it is subject to change as required by the urgency of any new work authorized. Hence, the roadway engineer is hard pressed at times to have the right piece of grading equipment available for the job at hand and occasionally he must use another as a substitute.

### On-Track ad Off-Track

The road has both on-track and the off-track types of equipment. For such work as cleaning out cut ditches, shaping fills in bank-restoration work, constructing new or extending existing sidings, and for removing snow from the tracks, the on-track spreader-ditcher and air-dump cars will be employed. For other work, such as ditching, excavating and constructing embankments for yard or industry tracks, channel changes and line changes, the off-track equipment

will be required to do the operation.

The off-track equipment includes both the crawler and wheeled types so that units are available for both short and long-haul grading operations. Attachments are available for some units to increase their versatility, such as interchangeable booms to convert an excavator to a crane, dragline, clamshell or shovel unit.

An effort is made to carry out all grading work with railroad equipment and operators. However, on jobs requiring an unusually large amount of grading—such as a current project at Demopolis, Ala., involving the construction of a track 10 miles long—it may be necessary to have a portion done under contract.

The success of the Frisco policy of doing its own grading is made evident by the low costs achieved—far below contractor's bids. The assignment of equipment, together with the costs per cubic yard, are shown in



TOURNAPULL outfits are used effectively when constructing sidings requiring longer hauls.



CRAWLER equipment, one with cable control and the other with a high-lift attachment, make backfilling easier.

the following examples of typical work:

For the construction of short industrial tracks, Mr. Beighley will assign either a bulldozer and scraper or a front-end loader. These units will do this work at a cost of approximately 10 cents per yard.

For siding extensions, he will assign two Tournapulls, a dozer-pusher and a dozer-leveler. These units will do the grading at about 20 cents per yard.

For the construction of longer spur tracks and for line changes where earth excavation is involved, two Tournapulls, two bulldozer-scrapers, a dozer-pusher, a dozer-leveler, and a motor patrol will be assigned. This work will average about 25 cents per yard.

Where rock excavation is involved in addition to the earth, he will add two wagon drills, two 300-cfm air compressors, and a 2-cu yard crawler shovel. The rock excavation will average about \$1.50 per yard.

Bridge filling is handled by either off-track or on-track equipment. The off-track units used will include two bulldozer-scrapers and a front-end loader, and they are expected to fill bridges at a unit cost of 15 cents per yard. The on-track equipment,

assigned to such work will include a 2-yard crawler shovel, a Jordan spreader, 12 air-dump cars and a D7 bulldozer.

The restoration of embankments is usually handled by two bulldozer-scrapers and a front-end loader. This work averages about 8 cents per yard.

As a rule, the operators for the grading machines are selected from the track forces, after they first have indicated a desire to become operators. These men start their training by operating and maintaining a small Fordson tractor used primarily for cutting weeds. After mastering this unit, they are instructed in the operation and maintenance of Caterpillar D2 and D4 front-end loaders. Next they progress to the D6 and D7 tractors with scrapers, the LeTourneau-Westinghouse outfits. and finally to the dragline and shovel units. A few become repair mech-

### Trailer Housing

These men are employed the year around and are on monthly salaries. They are housed either in a camp bunk car or in a house trailer, the latter being assigned to the men and

their wives where normally it would be impossible for the operators to get home on week ends. The house trailers are moved by either a panel or pick-up truck assigned to the outfit. In a few instances, the operators own their house trailers.

Where the operator is housed in a trailer the grading unit is ordinarily moved on a flat car, which is accompanied by a tool-and-material car, and the trailer is moved over the highways. For the operators not using house trailers, special cars, half of which are flat for storing the grading machines, are assigned. A tool-and-material car also accompanies each of these outfits.

On projects where six or more pieces of equipment are working, a mechanic is assigned to keep the machines in running condition and make light repairs. A helper is also assigned to service the machines. When a smaller number of units work together, the operators service their own machines and make light repairs. Should heavy repairs be required, an operator will call the general supervisor of work equipment for assistance, who will send a supervisor to the scene. The supervisor will arrange for the necessary repairs.

# With This Equipment ...

- 1 Caterpillar D2 front-end loader
- 13 Caterpillar D4 front-end loaders
- 4 Caterpillar 933 front-end loaders
- 1 Caterpillar D6 bulldozer 14 Caterpillar D7 bulldozers
- 2 LeTourneau-Westinghouse D Tournapulls
- 5 Lorain dragline shovels, ¾-yd capacity
- 1 Lorain dragline shovel, 2-yd capacity
- 1 Lorain Moto-crane, ½-yd capacity
- 1 P-M Trak Kleener
- 28 Air-dump cars

- 2 Jordan spreaders
- 3 McCann spreaders
- 3 Caterpillar motor patrols
- 3 Koehring 6-yd Dumptor trucks
- 2 P-M Speed Swings
- 1 Gradall
- 30 Fordson tractor mowers
- 2 I-R wagon drills

## ... The Frisco Does This Work

Industry track construction
Siding extensions
Line changes
Sag raises
Cut widening
Tunnel work
Bridge filling
Dragline work
Foundation excavation
Trenching for sewer, water, air and steam lines

Installation of sub-drainage systems
Ditching and channel changes
Rip-rap placement
Cleaning culvert outlets
Correcting drainage complaints of
various types
Building up road-crossing
approaches
Bank and cut-restoration work
Installing culverts
Handling rail from stock piles to
welding production line

Handling track and bridge materials
Loading and unloading bulk materials
Installing railroad crossings
Snow handling
Cleaning yard tracks
Cleaning up slides and flood deposits
Construction of roadways
Breaking up pavements
Refuse disposal
Assisting at derailments





OVERHEAD MONORAIL crosses both car repair tracks at Industry yard and extends over an area where heavy parts are stored. Entire operation is adequately lighted for night work. Cross tracks (right) are used for moving wheel sets to and from cars shopped for new wheels. Bins under the monorail are for storage of small car and truck parts such as pins, bolts, etc.

# How a Small Investment ...

Central of Georgia's stub-end rip tracks at Atlanta save 24 hours or more on most repair jobs, as result of revised work assignments and suitable mechanical adjustments — Monorail increases flexibility

Car delays have been greatly reduced at the Industry yard of the Central of Georgia in Atlanta by revising the car repair facilities and car repair operations. A similar result was obtained at the Columbus, Ga., yard about two years ago when car repair facilities there were changed. (Railway Age, Aug. 16, 1954, p. 24). While the Columbus operation is over through tracks where cars need to travel in only one direction while being repaired, the Atlanta revision is proving that a stub-track car repair facility can produce good results too.

Heart of the new rip track is a monorail spanning the two car repair tracks and extending out at one end so that a considerable stock of heavy items such as yokes and couplers can be handled with the 2-ton electric hoist. On each side of the monorail installation are cross tracks which make it possible to move wheels to a car for change-outs.

At the center of each repair track an air cylinder has been installed in a pit so that the wheel set can be lifted off the cross track and turned into position for installation. A narrow-gage transfer car moves wheels from 15 wheel storage tracks.

The large number of wheel storage tracks makes it possible to stock only one type of wheel on each track so that no extra work or time is consumed in getting the proper wheel set. The transfer car can be loaded by the 2-ton hoist and this system is used for emptying the wheel cars from the Central's wheel shop at Macon.

The rip tracks connect with the throat of Industry yard. This is a flat yard and normally is worked only from one end. The yard locomotives can kick shop cars into the repair tracks during their regular classification work. The two tracks allow repair work to be carried on at one track while the switch is set so that the other is available to receive shopped cars. Upon completion of the car or cars on this one track, the yard office is informed and the

switch is thrown so that this track can be pulled and made available for more bad order cars.

Repairs alternate back and forth between the two tracks, and cars on one track are completed before starting those on the other. An electric car puller and snatch blocks permit spotting cars and moving them in either direction while undergoing repairs.

### One Man Can Do Most Jobs

The 2-ton electric hoist and two auxiliary hand-operated hoists, the area covered by the monorail, and the simplified wheel handling mean that most car repairs normally requiring several men can now be oneman operations. One man can change a coupler in only a few minutes. Even a wheel change can be done with little difficulty because the three hoists and the monorail can be used as an A frame for dismantling the car truck.

It has been found that it takes less





WHEEL STORAGE TRACKS (left) are numerous enough that each needs hold only one size and type of wheel, simplifying the handling. Minimum manpower requirements for all repair operations are the aim of the equipment and layout which has now become a 24-hr operation. By using the monorail hoist, coupler changes (right) are frequently made by one man.

# ... Saves Car Hours

time to change a pair of wheels than to remove the journal protective compound and fill out the AAR repair billing card. Illumination permits round-the-clock operation on the tracks.

Concrete pads at points along these tracks simplify jacking of cars.

Adequate lighting and facilities which permit one-man repairs have made it possible to work the rip track around the clock. Car department assignments and schedules have been changed so that inspection, oiling, and repairs are now done on every shift seven days per week. Formerly the car repair tracks were switched each morning with the yard locomotive separating and spotting every car. This meant that the bad order cars had to be accumulated in the yard, and it also meant that nearly every car that was shopped would spend 24 hours on the repair track, and there would be an additional delay awaiting the once-daily switching. At that time there were only inspectors and oilers on the second track, and only inspectors on the third.

Typical repair track output is about a dozen cars daily. Repacking and brake cleaning constitute most of this work. Loads generally are switched in for new wheels or for repair of safety appliances. The 2-ton hoist has been successfully

### HOW MUCH HAVE CAR DELAYS DECREASED?

	Typical Results from Revised Repair Operation	Former Operation Would Have Given These Results		
EMPTY BOX CAR—REPACKING Time Saved: 23 hr 15 min				
Bad Order 4:	30 p Monday	4:30 p Monday		
On Shop Track12:	30 a Tuesday	7:30 a Tuesday		
Released by Shop Track 6:5		3:30 p Tuesday		
Pulled 8:	15 a Tuesday	7:30 a Wednesday		
HOPPER-REPACKING				
Time Saved: 39 hr 40 min				
Bad Order 3:3	35 a Tuesday	3:35 a Tuesday		
On Shop Track11:2	20 a Tuesday	7:30 a Wednesday		
Released by Shop Track 1:3	35 p Tuesday	3:30 p Wednesday		
Pulled 3:	50 p Tuesday	7:30 a Thursday		
GONDOLA—CRACKED COUPLER AND	BROKEN TRAIN	LINE		

### GONDOLA-CRACKED COUPLER AND BROKEN TRAIN LINE

Time Saved: 39 hr 45 min

Bad Order	12:35	p	Tuesday	12:35	p	Tuesday
On Shop Track	1:45	p	Tuesday	7:30	a	Wednesday
Released by Shop Track	3:00	p	Tuesday	3:30	p	Wednesday
Pulled	3:45	p	Tuesday	7:30	a	Thursday

### HOW A SMALL INVESTMENT SAVES CAR HOURS

car repair operation can successfully keep pace with today's faster freight operations.

used for adjustment of shifted loads.

The new operation began the first of this year. There has been no increase or decrease in the number of car department employees—25 are employed. The car department with new job assignments and schedules has successfully handled an increased work load. In January 1956, 251 bad order cars were repaired as compared with 220 cars in January 1955. The 251 bad orders this year came from an average of over 700 individual cars handled in Industry yard daily. This was up about 50 cars daily over the 1955 figure.

In addition, there has been a substantial reduction in car delays. The time saved is usually from 24 to 36 hours on each bad order car. The transportation department reports that requests for explanation of cars delayed in transit through Industry yard have virtually disappeared. The changes made by the Central of Georgia have proved that a stub-track



CENTRAL OF GEORGIA's first repair track speed-up was at the Columbus, Ga., yard, and was reported in Railway Age (right) on August 16, 1954. Release of two tracks formerly used for company coal storage permitted establishment of a new car repair facility. At the same time new work schedules and assignments were instituted to make it a 24-hr operation. Similar equipment and procedures have been made part of the repair track operation at Atlanta.

FIRST

The same has death damy to the same and the same a

# Railroading After Hours

### Hot Boxes and Talgo Trains

L ucas M. de Oriol—of the Talgo Company in Madrid—was a recent visitor at our shop, and soon got me way over my head in a discussion of hot boxes. I know what hot boxes mean economically, all right, but when it comes to the engineering questions they involve, I don't know my ABC's.

Mr. Oriol says—from his experience with Talgo trains in Spain, where they've had no bearing trouble whatever—that, in his opinion, the mounting of wheels independent of a rigid axle is a big help in relieving bearings from strain.

He says the wheel, thus free of attachment to a rigid axle, can readily conform to the conditions of the rail on which it is rolling, with no interference from forces which an axle would transmit from the opposite wheel. He also suspects that "the reduction of lateral momentum and the guiding of each pair of wheels by the pair of wheels ahead" also result in reducing the number

by James G.



Editor Railway Age

and violence of the stresses to which bearings are subjected.

I have mentioned Mr. Oriol's opinions to a couple of competent engineers—who, while not completely convinced of their validity, concede that they are questions which are worth looking into; and, in any event, are highly interesting. I pass them along in my capacity as a reporter—being strictly neutral in an area where I am not entitled to an opinion.

### Who Is Entitled To an Opinion?

It's one thing to deny yourself an opinion in an area where you're not informed—and quite another to be restricted to neutrality where you know better. A trucking spokesman recently got me out of a tough spot of this kind by objecting to me as a

moderator for a panel to discuss controversial transportation issues. I believe I could have acted neutral in this chore, but it wouldn't have come easy.

I wonder how many people are as amazed as I always am at the number of strongly held opinions you run into which seem to have so little knowledge to support them. If there is a big criminal trial or a political scandal prominently reported in the newspapers, nine out of ten people are always ready to tell you, with deep conviction, whether the accused is guilty or not.

The jury, which hears all the evidence and knows all the details, has the devil's own time trying to make up its mind where the truth lies—but many people with only a small fragment of information have no doubts at all.

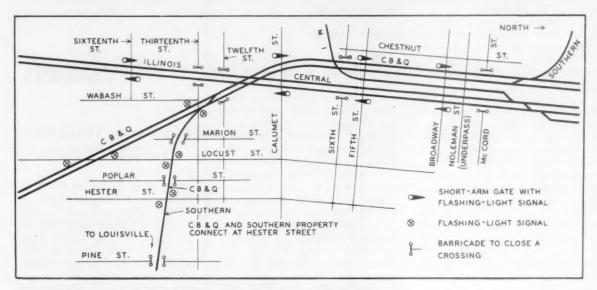
Wouldn't much of the controversy which bedevils our political and economic life disappear—if strong opinions were held only by those with enough information to entitle them to sit in judgment?



If the town permits this ...



... the railroads can afford this



... and all unprotected grades crossings are eliminated

### THE CROSSING PROBLEM . . .

# Getting More Help from a Town

As an outstanding example of the results of a "meeting of minds," the city of Centralia, Ill., has cooperated with its four railroads and the state highway department in planning and financing a grade crossing protection project for all crossings within the city limits.

Formerly there were 23 grade crossings in Centralia. The Illinois Central extends practically north and south through the town. Entering from the northwest, the Burlington previously ran south in Chestnut

street, parallel with the IC to Calumet street, then crossed the IC and extended south. Near 13th street, a connection from the Burlington extends east to Hester street, to connect with the Southern going eastward to Louisville.

The Southern uses the Burlington tracks through Centralia between this connection at Hester street and a junction in the north part of the city. The Missouri-Illinois, from the southwest, crosses the Burlington near 7th street, then connects with

the IC, using the IC tracks from there north through town.

Through Centralia, the IC operates 12 passenger trains and about 15 freight trains daily. The Burlington operates 13 freight trains, and the Southern 6 freight trains daily. The M-I operates two red ball freight trains daily and two local freight trains daily except Sunday.

Centralia had three highway-traffic grade crossing problems.

1. Prior to the improvement, State Highway 161 was routed on Broad-

### GETTING MORE HELP FROM A TOWN

way, an important business street in the town. Because of the heavy flow of traffic, both local and through, on this street, delays and congestion resulted when trains were moving over the crossing. To eliminate these delays, the state and the department of highways prepared a proposal for an underpass for this state highway at Noleman street, not previously open over the railroads.

2. Centralia, because of its normal growth and expansion, needed to improve Chestnut street. A satisfactory improvement plan was difficult because the Burlington tracks were

located in this street.

3. Conditions at the important grade crossings of Broadway, Fifth and Calumet with the IC and the CB&Q had long been under discussion between the city and the railroads. Proper protection could not be installed at all the streets because of physical limitations with the Burlington tracks in Chestnut street. Protection was limited to Burlington watchman and IC watchmen on duty at Broadway from 7 a.m. to 11 p.m., to protect train movements on their respective roads, and at McCord street, where one crossing watchman was on duty from 8 a.m. to 6 p.m. to protect both IC and Burlington trains.

### Solution to Problems

After many informal meetings between the railroads, the state highway department, and the city, the Illinois Commerce Commission, under the direction of Chief Engineer R. B. Thomas, with full cooperation of all concerned, made a study of all three problems, and at formal hearings developed these findings:

• By moving the Burlington tracks out of the street, Chestnut street could be improved, and crossing protection could be provided in an economical manner at three im-

portant intersections.

Such a move has shortened the length of the proposed underpass for the state highway at Noleman street, resulting in a substantial economy.

Gates and flashing-light signals could be installed to protect both the

Illinois Central and Burlington tracks, jointly, at the crossings at Boadway, Fifth and Calumet streets, and to protect the tracks of the IC at 16th street crossings.

 Flashing-light signals could be installed at six crossings as indicated

on the plan.

• Twelve crossings, shown on the plan, could be entirely closed by erecting barricades.

### Special Controls

The crossing gates and flashinglight signals are controlled automatically by track circuits. Freights usually proceed through the crossing protection area at 30 mph or less. The IC passenger trains stop at the station, which is south of Broadway. To avoid unnecessary delay to street traffic, speed selection controls are included in the project so that the gates are lowered for about the same time prior to arrival of a train at a crossing, regardless of whether the speed is 30 mph or slower.

If an approaching train, after having caused the gates to go down at Broadway, stops for more than 70 seconds, the protection is cut out and the gates go up, to allow street traffic to move over the crossing. Other similar special controls are used to avert delay to street traffic when no train or engine movement over a

crossing is imminent.

The state of Illinois paid for the underpass; the city of Centralia paid about \$31,000 on the expense of moving the Burlington tracks and connections thereto; and about \$29,000 toward the total cost of the new crossing protection, the railroads paying the remainder, which was more than 60 per cent of the cost of the protection.

The Illinois Central prepared the detail plans, and did the construction work for the four gate crossings. The protection at the other crossings was installed by the signal department of the railroad involved.

The gates and the flashing-light signals were furnished by the Western Railroad Supply Company, and the relays and other signaling equipment by the General Railway Signal Company.



# Frozen

### By WILLIAM SCHLAPFER

Application Engineer Worthington Corporation

Transporting frozen foods of all kinds across the Arabian desert are two refrigerator cars built for use on the Saudi Government Railroad. This line connects the port of Damman on the Persian gulf with the capital city of Riyadh, approximately 360 miles. This railway, with stations near the Arabian American Oil Company's major oil producing centers, is called on to move increasing quantities of frozen foods to the area.

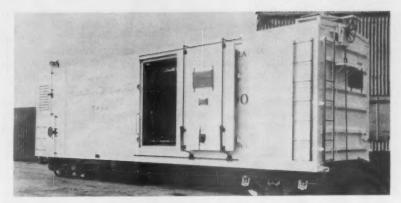
The cars were manufactured by Societe Gregg D'Europe, S. A. Loth near Brussels, Belgium, associates of the Gregg Company, Ltd., New York, and are said to be the first in the world equipped with two separate two-stage low temperature refrigeration compressors. These reciprocating refrigeration compressors were built by Worthington Corporation.

Engineers had determined that two-stage compressors would be required because of the extremely high ambient temperatures (125 deg F) prevailing throughout Arabia during most of the year. Excessive compression ratios would have been encountered had the usual practice of using single stage units been followed.

The cars are steel frame, steel sheathed, wood lined and fully insulated. The roof of aluminum sheets deflects heat. Each side has a 6-ft COMPRESSOR was designed by Worthington to make possible two-stage compression with a single machine.



MECHANICAL REFRIGERATOR car built by Gregg is AAR-standard, as is all Saudi-Arabian railroad equipment.



# Foods Are Safe in 125° Heat

Built to U. S. standards, Saudi Arabia's mechanical reefers have unique twostage refrigeration equipment—More to be built

wide, sliding, flush type refrigerator door with Camel screw type door mechanisms to seal the cargo space. This cargo space is approximately 2,000 cu ft and will transport a load limit of 80,000 lb of food. Heavy duty Timken roller bearings are used. Fifty-ton capacity trucks of stabilized design, rubber draft gears and Type E couplers have been installed.

The cars have a length of 42 ft over the strikers; a width of 10 ft; and inside length is 40 ft, of which 7 ft 6 in. is used for the machinery compartment. Inside width is 8 ft and height is 8 ft 2 in. The height of the floor from the rails is 4 ft 3 in. To minimize heat transfer, the new reefers are insulated with aluminum sheets and 8 in. of Fiberglas on the floor, sides and ends. Ceiling contains 10 in. of this type of insulation. The exterior of the cars is painted chalk white to reflect heat away from the surfaces.

Mechanical equipment for each car consists of two separate refrigerating systems, each rated at 40 per cent of system capacity to protect against refrigeration failure and resultant loss of perishable cargo. Each car includes an air-cooled diesel electric generator with two 150-gal fuel tanks slung under the frame,

two 7½-hp motors, two Freon-12 compressors, two evaporators with automatic defrost mechanism, two air-cooled condensers, and all dust tight safety and operating controls.

### Lading Spaced from Walls

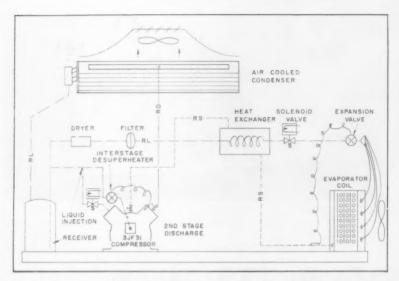
The evaporator coils and fans are atop the machine space in a position to blow air out into the car above the cargo. Interior of the cargo space is constructed with side wall and floor slats so that the lading is spaced away from the sides, ends and bottom to allow the maximum contact with the circulating cold air. The air-cooled condensers are mounted in the roof and air from the side openings of the car is forced to pass through the condenser coil and out the top. Controls are for two ranges, one for frozen foods being held at below zero, and the other for fresh produce, by which cargo space temperature can be held from 32 deg F to 65 deg F, depending upon the produce being transported.

The two compressors in each car are special machines designed by Worthington and combine two stages in one compressor, the compound compression being accomplished by internal manifolding of the cylinders. These compressors take suction gas from the evaporator at different pressures and temperatures depending on the control range. Refrigerant vapor enters the three first stage cylinders where it is compressed. After leaving the first stage cylinders the refrigerant gas passes to the single second stage, or high-pressure, cylinder, where it is compressed.

Intercooling or desuperheating of the hot discharge vapor from the first stage cylinders is accomplished by injection of cooled liquid-laden vapor from the automatic thermostatic expansion valve. The thermostatic bulb for this expansion valve is in the suction side of the second stage head. Temperature of the gas is controlled before it enters the high stage cylinder, thereby preventing over excessive discharge temperatures.

Two of the first stage cylinders are equipped with gas operated unloaders, which are used for start-up and capacity control of the compressor. During the start-up the unloader fingers hold open the suction strips and remain in this position for approximately 13 sec.

Then a time delay relay component will allow discharge gas



Schematic arrangement of refrigeration components in Saudi-Arabian reefers.

pressure to overcome hold-down spring action and lift the unloader fingers from the suction valve strips. These two-stage compressors were specified not only to prevent high compression ratios but also because

air-cooled condensers are used. The resulting operating pressures and temperatures are too high for singlestage equipment to be used for this type of application in which it is subject to extremes in operating complications. To hold the cargo space temperature anywhere between 32 F and 65 F two of the three first stage cylinders on the compressors are unloaded. When 50 per cent unloaded, for this higher temperature region, a special method of liquid injection is brought into play to prevent the two cylinders in the one bank from overheating. Liquid is injected directly into the head on top of the valve plates and only several drops per minute are allowed to enter the head to keep it cool.

First reports from exhaustive tests carried out in Saudi Arabia by Aramco engineers indicate that these cars are performing above expectations and are the first of many that will be put into this specialized service.

(Continued from page 13)

case, the Rock Island has been granted permission by the Illinois Commerce Commission to boost its suburban fares an average of 15%. The fare boost is expected to give the Rock Island \$325,000 additional revenue annually.

### Santa Fe Extends Piggyback Service

The Santa Fe has announced three more extensions of its piggyback service. The first is between Chicago and 44 Kansas points; the second, between Kansas City and the same 44 Kansas points; and the third is between Kansas City and various places in Oklahoma.

New tariffs are now in effect between the Kansas points and Chicago and Union City. The Kansas City-Oklahoma tariff will be effective about May 1.

### FRP Announces Its Fourth Annual Fellowship Program

The Federation for Railway Progress has announced its Fourth Annual Fellowship Program under which three \$1,000 scholarships will be

given to selected employees of Class I railroads.

To be eligible, an employee must be less than 35 years old and have had two years experience with a railroad: Candidates must have the endorsement of their president or chief executive officer, and the railroad must agree to pay a successful candidate at least a nominal salary while he is in school.

Candidates must file with the federation by June 1. Judges for the contest are James G. Lyne, FRP chairman and editor of Railway Age; David I. Mackie, chairman, Eastern Railroad Presidents Conference; and William N. Leonard, FRP president.

### T. M. Healy Confirmed For Retirement Board

Thomas M. Healy will continue as management's representative on the Railroad Retirement Board for the remainder of a term ending August 28, 1958. His appointment by President Eisenhower was confirmed recently by the Senate.

Mr. Healy has been serving on the board since last August when he succeeded Frank C. Squire, who resigned after reaching the age of 70. Because he was serving under a socalled recess appointment, made by the President when the Senate was not in session. Mr. Healy's nomination had to be submitted to the Senate after Congress convened in January. (Railway Age, Aug. 29, 1955, page 9.)

### ICC Probing Car Service To Brooklyn's Terminals

The Interstate Commerce Commission has instituted an investigation into relationships between railroads and the Brooklyn contract terminals—Brooklyn Eastern District Terminal, Bush Terminal, New York Dock Railway, and Jay Street Connecting Railroad.

The inquiry, docketed as Ex Parte No. 201, was instituted on the commission's own motion. It will embrace "charges, rules, regulations, practices and the terms of existing contracts, agreements and arrangements affecting car handling, methods of settlement of per diem and demurrage charges, reclaim allowances, car detention and interchange of freight" between trunk-line railroads and the terminals.

Stated objective is to establish practices which will promote "prompt return of freight cars, thereby promoting greater efficiency in the use and increase in the supply of freight cars." The terminals and all railroads having connections with them are respondents. The order of investigation said hearings would be held, but set no date.

### Walrath Takes Oath As Member of the ICC

Laurence K. Walrath took his oath of office as a member of the Interstate Commerce Commission at special ceremonies recently in the commission's Washington headquarters. Commission Chairman Anthony F. Arpaia presided, and the oath was administered by Judge Warren L. Jones of the Fifth Circuit Court of Appeals, Jacksonville, Fla.

Mr. Walrath was practicing law in Jacksonville at the time of his appointment to the commission (Railway Age, Mar. 26, page 39). He succeeded Kelso Elliott to whom the commission said its official farewell at the March 29 ceremony. An out-of-town appointment made it impossible for Mr. Elliott to attend.

### Michigan Seminar Will Study Automation Trend

The impact of automation on the nation's railroads—on business procedures, train operation and personnel—will be the theme of a two-day seminar at the University of Michigan, April 25-26.

Faculty members from Michigan colleges and officers from Michigan railroads will attend this Second Michigan Railroad Management Seminar, sponsored jointly by the university's Transportation Institute and the Michigan Railroads Association.

At a dinner on April 25, Thomas J. Deegan, Jr., vice-president—staff, New York Central, will discuss automation with emphasis on its promise for the future of railroads, and its possible effects on personnel.

### Weeks Report Seen as Factor in 51/2% Rate Boost

ICC approval of the Ex Parte 196 freight rate increase last month is a "tangible result" of the publicity brought on by discussion of the Cabinet Report, Pennsylvania Vice-President, Finance, D. C. Bevan, re-

cently told a luncheon meeting of the New York Society of Security Analysts.

Mr. Bevan added that the increase was not enough to meet the railroad needs at this time.

The PRR officer also reported that the General Motors "Aerotrain" has been "favorably received" by the public to the extent that, in recent weeks, there are indications it is creating additional passenger traffic for the road. Mr. Bevan revealed that the Budd Company "tubular train" now being built for the PRR will "probably" be put into service between Washington and New York City.

### Financial

## ICC Investigating Frisco Stake in Central of Georgia

The Interstate Commerce Commission has instituted an investigation to determine whether the St. Louis-San Francisco has acquired control of the Central of Georgia without

having obtained prior approval from the commission.

Frisco's application for authority to acquire control of CofGa has been pending before the commission since last December (Railway Age, December 12, 1955, page 12). The investigation, now instituted by the commission upon its own motion and docketed as No. 31977, has been consolidated with the application proceeding, which is F. D. No. 19159.

The order of investigation said that Frisco, as of March 17, owned 169,697 shares of CofGa's common stock of which there are 337,236 shares outstanding. Of the 170,417 shares of preferred outstanding, Frisco owned 83,492 shares, the commission's order also said.

Baltimore & Ohio.—Debentures for Income Bonds.—The ICC has authorized this road to issue \$54,710,000 of 4\gamma\_2010, in exchange for a like amount of outstanding convertible income bonds. To provide for conversion of the debentures, the road also was authorized to issue 547,100 shares of \$100-par common stock.

Boston & Maine.—To Pay President \$75,000. — Stockholders at the



### A Damp Beginning for the "Fairless Hills"

Rebuilt Pennsylvania sleeping car, "Fairless Hills," gets railroad version of ship launching rite in ceremonies at Pennsylvania Station, New York. Marleen Ingerson, employed at Fairless Works of U.S. Steel Co., pours water over car as Benjamin Fairless, president of American Iron & Steel Institute and former U.S. Steel chair-

man and president, at left inside car, watches with J. W. Galbreath, president of Danherst Corp., and J. L. Cranwell, PRR's vice-president—New York. Car, to operate in "General-Trail Blazer" in New York-Chicago service, is named after Fairless Hills community developed in Bucks County, Pa., by Mr. Galbreath.

April 11 annual meeting approved a 10-year contract and a \$75,000 yearly salary for President Patrick B. McGinnis. Also approved was a stock option plan making 50,000 common shares available for purchase by key employees, including 25,000 shares for Mr. McGinnis, at \$26,62 a share.

### **Applications**

ERIE.—To assume liability for \$6,225,000 of equipment trust certificates to finance in part the acquisition of six 1,750-hp, diesel-electric switching locomotives from the Electro Mctive Division of General Motors Corporation, and 550 box cars from the Greenville Steel Car Company. The equipment is expected to cost a total of \$7,987,000. Estimated unit cost of the locomotives is \$175,000; \$900 of the cars, equipped with Df Inaders, are expected to cost \$12,964 each, while the other 50 are expected to cost \$9,100 each. The certificates would mature in 15 annual installments of \$415,000 each, beginning June 1, 1957. They would be sold by competitive bids which would fix the interest rate.

GRAT NORTHERN.—To issue \$6,600,000 of equipment trust certificates to finance in part the construction, in its own shops, of 1,000 box cars which would cost a total of \$8,287,000. Estimated unit cost of 500 of the cars, which would be 50½ ft. long, is \$9,144. The other 500 would be 40½ ft. long, and their estimated unit cost is \$7,430. The certificates would mature in 30 semi-annual inscallments of \$220,000 each, beginning October 1. They would be sold by competitive bids which would fix the interest rate.

MISSOURI PACIFIC.—To assume liability for \$2,350,000 of equipment trust certificates to finance in part the construction, in its own shops, of 30 box cars. Estimated unit costs of the cars range from \$8,174 to \$11,776, and the estimated cotal cast is \$3,193,780. The certificates would mature in 15 equal annual installments, beginning April 15, 1957. They would be sold by competitive bids which would fix the interest rate.

PENNSYLVANIA.—To issue \$7,560,000 of equipment trust certificates, the first installment of a proposed \$14,670,000 issue, the whole of which would finance in part acquisition of equipment

(listed below), expected to cost \$19,588,965	J.
Description Estim	ate
and Builder Unit	Cos
497 70-ton hopper cars (Bethlehem Steel	
Company)\$ 8,	140
300 70-ton hopper cars (ACF Indus-	
tries, Inc.) 7,	975
1 passenger-train auxiliary power	
car (Budd Company) 298,	101
7 coaches (Budd) 136,	012
500 box cars, equipped with devices	
for lading protection (PRR shops) 1:	2,40
408 box cars (PRR shops) 8,	900
200 flat cars (PRR shops) 10,	100
The certificates would be sold on the	
of competitive bids which would fix the int	
rate. They would mature in 15 semiannua	in
stallments, beginning October 1.	

WABASH.—To assume liability for \$8,310,000 of equipment trust certificates to finance in part acquisition of equipment (listed below), ex-

	ed to cost \$10.398.859.	ow), ex-
peci	Description and Builder	Estimated Unit Cost
300	401/2-ft steel box cars (ACF In-	
	dustries, Inc.)	\$ 7,410
200		
100	covered hopper cars (Pullman-	
	Standard Car Mfg. Co.)	10,450
50	mill-type gondola cars (Bethlehem	
97	Steel Company)	
97	drop-end gondola cars (Wabash	7.992
60	50-ton flat cars (Wabash shops)	10,004
30	50-ton flat cars equipped for	
30	loading trailers (Wabash shops)	12,442
10	50-ton flat cars with end bulk-	12,442
	heads (Wabash shops)	11,574
50	70-ton flat cars (Wabash shops)	
3	4,800-hp two-unit diesel-electric	
	locomotives (Fairbanks, Morse &	
	Co.)	. 494,846
3	1,750-hp diesel-electric locomo-	
	tives (Electro-Motive Division,	
	General Motors Corporation)	182,166
2	1,750-hp diesel-electric locomo-	140 110
1	1,750-hp diesel-electric locomo-	100,110
	tive (Electro-Motive)	169 199
The	certificates would mature in 15	00,100
instal	liments of \$554,000 each, beginni	na April
1. 19	957. They would be sold by co	mpetitive
bids	which would fix the interest rate.	

### **Organizations**

American Society of Training Directors.—Five railroad officers will discuss "The Obstacles—In Terms of People—Which Stand in the Way of Building a Better Railroad" during the annual conference of ASTD, in the Hotel Statler, New York, beginning at 9 a. m., May 4. Panel members are H. T. Cover, assistant vice-president and chief mechanical officer, Pennsylvania; T. M. Goodfellow, president, Long Island; W. L. Price, vice-president—finance and accounting, Baltimore & Ohio; C. E. Williams, general passenger traffic manager, New Haven; and L. W. Horning, vice-president—personnel, New York Central. Michael Fox, president, Railway Employees' Department, A. F. of L., will be luncheon speaker.

Chamber of Commerce of the United States.—The 44th annual meeting will be held April 30-May 2, in the National Chamber Building, Washington, D. C.

Pittsburgh Passenger Club.— Newly elected officers are: President, W. E. Hussing, passenger representative, Pennsylvania; vice-presidents, E. J. Doerste, district passenger and freight agent, Missouri Pacific, and G. S. Holland, superintendent, Pullman Company; secretary-treasurer, M. F. Synder, chief clerk, Pullman Company.

Rail Traffic Association of Cincinnati.—Newly elected officers: President, M. F. Connor, general agent, Northern Pacific; vice-president, Harry P. Chatron, general agent, Reading; secretary-treasurer, Walter H. Bachmann.

### Supply Trade

### Koppers Sets Up Transport Research Section

A transportation research and development section has been set up in the traffic and transportation department of Koppers Company, primarily to study and develop solutions to complex transportation problems. Its work will include study of transportation economics as related to plants and warehouses and their locations; effects of freight equalization compared with other means of allocating transportation expense; and development of new distribution practices and management techniques.

Related transportation subjects to be considered are new packing and shipping methods and materials; development and use of new equipment; and other long-range studies of the impact of transportation on overall efficiency of other Koppers operations.

operations.

William C. Brittain, formerly with
the Department of Defense as a logistician and management engineer has
been named section manager.

A. B. Drastrup, formerly president of A. M. Byers Company, has been appointed vice-president of Joy Manufacturing Company, at Pittsburgh.

J. Frederic Byers, Jr., recently elected executive vice-president, A. M. Byers Company (Railway Age, Mar. 5, p. 13), has been elected president, succeeding A. B. Drastrup, resigned.

Charles A. Mapp has been appointed district manager, Railroad Division, Fairbanks, Morse & Co., at Chicago, with responsibility for sales of all company products to railroads in the middle west, and locomotive sales only in the St. Louis and Southwest areas. During the past year and a half, Mr. Mapp was on tour of duty in South America for Fairbanks, Morse.

At the recent annual meeting of the Chicago Railway Equipment Company in Chicago, J. S. Walker was reelected president, chairman of the executive committee and chairman of the board. No changes in the company's management resulted from the recent proxy dispute.

St. Louis Railway Supply Company has moved its offices to the Railway Exchange Building, St. Louis, but will continue warehousing operations at 2114 North Second street.

Harold E. Moon, who has been a materials handling salesman and sales executive in the Cincinnati-Dayton-Columbus area for Yale Materials Handling Division, Yale & Towne Manufacturing Co., has been made manager of the Cincinnati sales and service branch. He replaces J. Russell Manning, appointed manager of the Detroit branch. John R. Hogan has been named manager of the Cleveland branch, and Garnett A. Vining, western regional sales manager at San Francisco.

Dan W. Oram has been appointed executive director of sales, Klemp Metal Grating Corporation, with his principal office in Chicago. He was previously with Kerrigan Iron Works, Inc., as head of the market development division.

A. G. Larson, assistant manager of commercial engineering, Air Brake Division, Westinghouse Air Brake Company, has been named southeastern district representative, at Atlanta, Ga.

Robert J. Bricmont, of the engineering service department of A. M. Byers Company, has been named manager of that department.

# 8,400,000 CAR-MILES

-No journal Bearing Failures! for 670 UNI-PAK equipped hoppers

in 12 months of continuous service

(details of this intensive-in-service test supplied on request)



120,000
UNI-PAK
Lubricators
giving exceptional
service on
30 Railroads

36-month repack period authorized

(on limited basis)

Gives maximum service

UNI-PAK's 3 way
Constant FILTERED oil feed
for better, safer journal lubrication

The exclusive UNI-PAK design features: (1) Three-inch pad of foam neoprene that holds 6-7 pounds of oil—more than any other lubricator.

(2) Specially developed lubricating yarns, continuously sewed through the neoprene pad and terminating in loops at top and bottom, deliver a constant feed of filtered oil. These yarns will not glaze.

(3) Rugged cotton body increases capillary attraction; buffers keep pad properly positioned and take up wear at fillet and collar.

WRITE FOR FULL DETAILS



UNI-PAK CORPORATION

BOX 8302 SWISSVALE, PA.

366 MADISON AVE., New York 17, N. Y. • 120 SO. LA SALLE ST. Chicago, III.



Mr. V. H. Peterson, Vice President, Railroad Division, Fairbanks, Morse & Co.



# "Come on in... history is made here"

Behind this door is the very heart of Fairbanks-Morse's pioneering of modern motive power design—the very heart of healthy competition. Over the past decade, both have benefited the railroad industry as a whole.

For example, these engineering facilities made possible the introduction and assured the top performance of these motive power First's by Fairbanks-Morse:

FIRST 2000 horsepower road locomotive FIRST 2000 horsepower road switcher FIRST 2400 horsepower passenger unit, the "Consolidation Line"

FIRST 2400 horsepower six-motor multi-service road unit, the "Train Master"—and now, the "Speed Merchant"—America's new high-speed, lightweight locomotive designed to put profit back in passenger service.

Each of these F-M First's was a trend-maker towards higher horsepower per motive power unit. Railroad management has been quick to realize the operating and maintenance advantages of F-M design that packs more horsepower into fewer units to inspect, service and maintain.

This trend has been followed by other locomotive builders—to the benefit of the railroad industry as a whole.

Pioneering the future . . . improving the present. These are the continuing goals at Fairbanks-Morse. They stimulate a type of healthy competition from which the entire industry benefits. Fairbanks, Morse & Co., Chicago 5, Illinois.



DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • MAGNETOS

### Railway Officers

CANADIAN PACIFIC.—J. D. Anderson. division engineer, Winnipeg, (Man.) terminals, has been named assistant engineer of track at Montreal, succeeding H. J. Gordon, appointed special engineer at Calgary, Alta., and assigned to changes being made to the station there. D. A. Fraser, roadmaster at Swift Current, Sask., has been named special engineer at Winnipeg, succeeding C. R. Pike, who has taken Mr. Anderson's place as division engineer, Winnipeg terminals.

The following changes have been made in the sleeping and dining car department: J. G. Heisler superintendent at Winnipeg, transferred to Vancouver, B. C., succeeding R. W. Ogilvy, retired. H. A. Donaldson, assistant to general superintendent at Winnipeg, appointed superintendent at Moose Jaw, Sask., succeeding D. R. Black, who replaces Mr. Heisler at Winnipeg. R. Newton, superintendent at Toronto, and R. Graham, superintendent at Calgary, have switched positions. W. L. Greenway, chief clerk to general superintendent, Winnipeg, has been appointed assistant superintendent, succeeding Harold Hartman, promoted to assistant to general superintendent at that point.

B. O. Brown, assistant supervisor, Montreal terminals, has been promoted to signal supervisor, Quebec district, succeeding E. S. Becksted, re-

W. Riley, assistant chief of data centers, has been appointed auditor passenger receipts at Montreal.

S. M. Gossage, assistant manager, personnel department, Montreal, has been named manager of labor relations at that point.

A. J. Laurendeau has been appointed to the new position of freight traffic manager for Canadian Pacific Transport Limited and for its Alberta and British Columbia subsidiaries—Dench of Canada at Calgary, Alta., and OK Valley Freight Lines at Penticton, B. C. V. A. Birney has succeeded Mr. Laurendeau in charge of the Manitoba-Saskatchewan operation, with the title of superintendent, and J. D. Newitt has been named assistant superintendent for the same territory.

CHICAGO & EASTERN IL-LINOIS.—H. L. Southerland has been appointed general agent at Birmingham, Ala., succeeding C. H. Robertson, retired.

DELAWARE & HUDSON.— Cyril C. Clemons, assistant auditor revenue, has been appointed auditor revenue, succeeding Frank E. Chesebrough, retired. Harry R. Signor, assistant auditor revenue also has retired.

Joseph C. Brennan, division engineer at Oneonta, N. Y., has been ap-



Sydney L. Mapes



Bernard J. Minetti

pointed engineer maintenance of way at Albany, succeeding the late Orville W. Stephens.

DENVER & RIO GRANDE WESTERN.—M. E. Eskildson has been named auditor, freight and station accounting, to succeed E. E. Newell, retired.

ERIE.—Harold E. Shaughnessy has been appointed superintendent of safety. The position of safety agent at Cleveland, formerly held by Mr. Shaughnessy, has been abolished.

M. F. Coffman has been appoint-

M. F. Coffman has been appointed assistant chief of research at Cleveland, Ohio. The position of assistant to chief of research has been abolished.

FRISCO.—T.D. Wages has been appointed superintendent terminals at Birmingham, Ala., and C. P. Battaile has become assistant superintendent at Amory. Miss.

Amory, Miss.

H. L. Gastler has been appointed director of industrial engineering at Springfield, Mo., and E. R. Tyler has been named trainmaster-road foreman of equipment at Enid, Okla.

W. D. Smith has been appointed trainmaster—road foreman of equipment at Pensacola, Fla.

GEORGIA & FLORIDA.—P.
W. Morgan has been appointed
master mechanic in charge of the
maintenance of equipment department, at Douglas, Ga.

CENTRAL.—Sydney **JERSEY** L. Mapes, chief engineer, has been appointed to the newly created position of assistant vice-president. He has been succeeded by Bernard J. Minetti, whose former position of assistant chief engineer has been abolished. Jurisdiction over the road's maintenance of way department has been transferred from the chief engineer to the vice-president and general manager. The maintenance of structures department will continue under jurisdiction of the chief engineer. Mr. Mapes joined the Jersey Central as

an engineering department rodman in 1911. From 1932 to 1945 he headed the maintenance of way department, then became assistant chief operating officer, and in 1948 chief engineer. Mr. Minetti, after 12 years with the New York Central, joined the Jersey Central as a structural draftsman in 1942. He was named engineer of structures in 1949 and assistant chief engineer January 1, 1956.

NICKEL PLATE.—K. B. Chilcot has been appointed division freight agent at Canton, Ohio, succeeding W. H. Turner, deceased.

NORFOLK & WESTERN.—S. S. Hosp, freight traffic manager—sales and service at Roanoke, Va., has been appointed general freight traffic manager—sales and service (other than coal and coke traffic) at that point. E. M. Dudley and R. F. Dickson, assistant freight traffic man-(Continued on page 44)



NEW HAVEN—Leslie H. Tyler has been promoted to chief information officer of the entire system at New Haven, Conn., having jurisdiction over the New Haven, New York and Boston offices. Mr. Tyler was formerly resident public relations manager at New Haven.



Members of our Institute have labored long and hard to improve thread packing. The Institute of Thread Machiners' Seal on bales of new packing now guarantees quality which meets or exceeds AAR specifications. Our member companies will be glad to offer help and advice on your packing problems. Let us know if we can help you.

INSTITUTE OF THREAD MACHINERS, INC.

141 East 44th Street, New York 17, New York

Atlas Processing Corp., New York, N. Y.
Meyer Burstein & Sons, Neenah, Wisconsin
Dallas Waste Mills, Dallas, Texas
The J. Milton Hagy Waste Werks, Philadelphia, Pa.
John J. McGrath, Inc., Philadelphia, Pa.
Hollier Waste Mills, Inc., Winona, Minn.
Twin City Textile Mills Waste Co., Inc., Norfolk, Va.

Twin City Textile Mills Waste Co., St. Paul, Minn.

### simple

The "Redipak" lubricating pad is a square block of foam neoprene, molded with cored passages and covered with cotton wicking material. It is installed—without any other packing—in the standard journal box without jacking the box.

# Stop Hot Boxes!

"Redipak" Lubricating Pad

points the way toward elimination

of the hot box problem

### foolproof

The square "Redipak" lubricating pad is fully symmetrical—it can be installed any side out, either face up. It can be inserted by hand or with a "Redipaker"—a simple bent rod which speeds up the work—and is removed with a standard packing hook.

No waste... with "Redipak"!

### cool-running

The "Redipak" lubricated bearing has operated as much as 50°F. cooler than waste-lubricated bearings, under certain conditions. In laboratory starvation tests, with no free oil in the box, the "Redipak" retained enough oil for 10,000 miles of high speed operation.



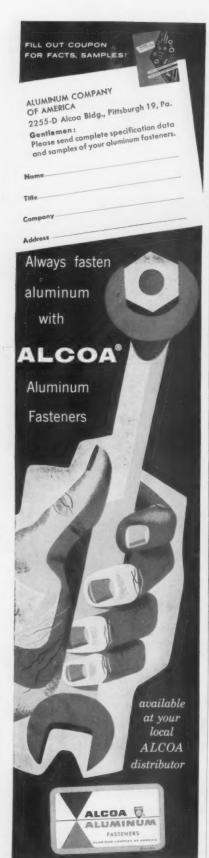
In service tests, "Redipak"

lubricating pads have operated over 90,000

miles each, without noticeable wear. No pad

has shown any sign of glazing. Inspection of the bearings shows that the pads do not lint. NATIONAL BEARING DIVISION

ST. LOUIS 10, MISSOURI





C. M. Davison, Jr.



Robert B. Curry

agers, have been named freight traffic managers in charge of sales and service of Western and Eastern territory, respectively, with headquarters as before at Roanoke. C. W. Nickless and E. P. Kinney, general freight agent and assistant general

(Continued from page 40)

as before at Roanoke. C. W. Nickless and E. P. Kinney, general
freight agent and assistant general
freight agent, respectively, have been
appointed freight traffic managers—
sales and service of Southern territory
and on-line territory, respectively, at
Roanoke. E. F. Stone, general eastern freight agent, and C. E. Corman,
general western freight agent, have
been named assistant freight traffic
managers at New York and Cincinnati, respectively. E. J. Merkel, general freight agent at Columbus, Ohio,
has become assistant freight traffic
manager at Chicago. C. M. Francis
has been appointed assistant freight
traffic manager at Roanoke; G. R.
Swisher, division freight agent at
Columbus, and C. R. Purdum, general agent at Portsmouth. Ohio W.

NORFOLK SOUTHERN.—J. M. Dillard, assistant freight traffic manager, has been promoted to general industrial agent, at Norfolk. The position of director industrial and agricultural development, formerly held by the late J. F. Dalton, has been abolished.

E. Burnett, general freight agent at

Roanoke, retires April 30.

PENNSYLVANIA.—Norman P. Patterson, superintendent personnel, Southwestern Region, has been transferred in the same capacity to the Chesapeake Region, at Baltimore. He has been succeeded by James V. O'Hara, supervisor labor relations, Northwestern Region, at Chicago.

David E. Pergrin, district engineer at Cleveland, has been transferred to Columbus, Ohio, succeeding J. C. Warren, who has been granted leave of absence. Robert J. Clarke, assistant office engineer at Philadelphia, has been appointed engineer of structures, Buckeye Region, at Cincinnati, succeeding C. F. Montague, assigned to other duties at Philadelphia. Frank

S. King, assistant division engineer at Williamsport, Pa., has been promoted to district engineer at Cleveland, succeeding Mr. Pergrin.

SOUTHERN.—Edward R. Sanner, office engineer, Central lines, at Knoxville, Tenn., has been appointed assistant to chief engineer, maintenance of way and signals, Central lines, at Atlanta. Ga.

John B. Hyde, vice-president, finance and purchasing, at Washington, D. C., will retire May 1 and will be succeeded by Charles M. Davison, Jr., comptroller. Robert B. Curry, assistant comptroller, has been elected comptroller. Mr. Davison, born June 19, 1914, in Richmond, Va., received his LL.B. degree at the University of Virginia in 1937 and joined the Southern in 1947 as general tax attorney. In 1953 he was elected comptroller. Mr. Curry, who was appointed assistant comptroller April 1955, was born July 21, 1911, near Dayton, Ohio. He holds an LL.B. degree from Franklin University and has done graduate work in business and financial subjects at several universities. He is a consultant to the Department of Defense on fiscal matters and has been an industrial consultant.

J. C. Bland, assistant passenger traffic manager at Memphis, retired April 1. F. H. Boone and E. B. Howes, division passenger agents, have been appointed assistant general passenger agents, headquarters remaining at Memphis and Chattanooga, respectively.

L. Stanley Crane, engineer of tests at Alexandria, Va., has been promoted to mechanical research engineer at Washington, D. C.

### **OBITUARY**

Charles H. Winter, 69, retired general superintendent of transportation of the Milwaukee at Chicago, died April 9.

William H. Ott, Sr., 88, retired general agent of the Burlington, died April 13 at Elgin. Ill. A NEW

# MOTION PICTURE A 16mm film in Technicolor Narrated by

Westbrook Van Voorhis Running time: 14 minutes

> Produced for ASSOCIATION OF AMERICAN RAILROADS Transportation Building Washington, D. C.

### THIS NEW FILM . . .

- . . . Discusses recommendations which are at the heart of the report of the Presidential Advisory Committee on Transport Policy and Organization;
- ... Traces the course of competition as one of the creative forces that has made this country sound, strong and prosperous;
- ... Speaks out in favor of allowing the regulated forms of transportation more freedom to price their services in competition with one another.
- ... Is designed to help bring about a better understanding of today's transportation situation.

### THE RIGHT TO COMPETE

is available, on a free loan basis, for showing before adult audiences. Bookings for any given date can be made through the following sources:

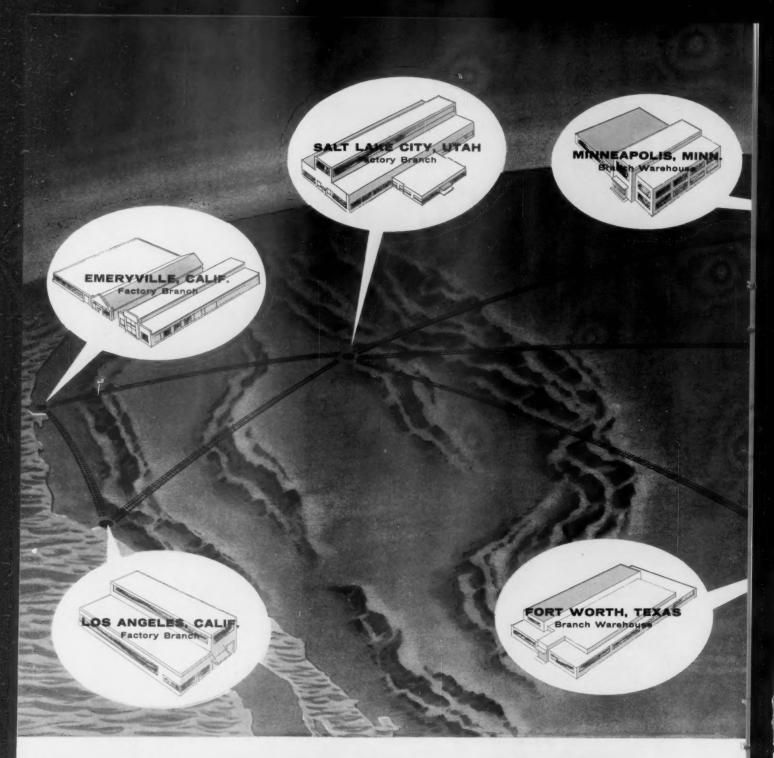
### THE PUBLIC RELATIONS DEPARTMENT

of most railroads

### ASSOCIATION FILMS

Ridgefield, N. J., Broad and Elm Sts. LaGrange, Ill., 561 Hillgrove Ave. Dallas, Texas, 1108 Jackson St. San Francisco, Calif., 351 Turk St.

STERLING · MOVIES U.S.A. New York, N.Y. 205 East 43d St.



# "ON-LINE" SERVICE FOR 96% of all General

ELECTRO-MOTIVE'S strategic network of Factory Branches and Warehouses puts genuine General Motors locomotive parts within 24 hours of any point in the United States.

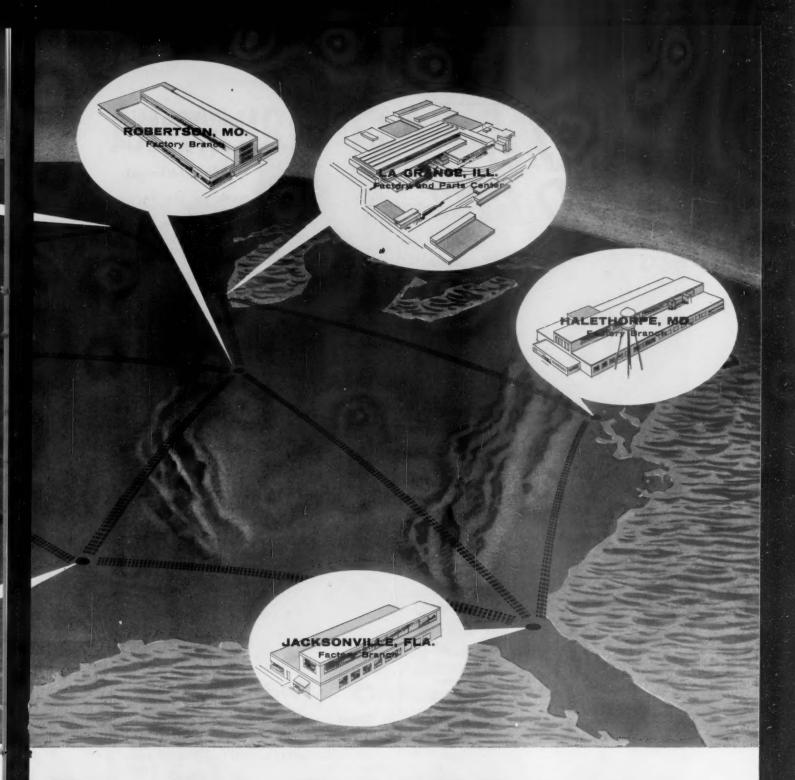
It provides ''on-line'' service for 96% of all General Motors locomotives in this country.

Six factory branches, plus our facilities at La Grange, handle remanufacture of major components with the

same production-line efficiencies, the same laborsaving tools and equipment used in original manufacture.

Traction motors and other major components are available for immediate shipment on "Unit Exchange." You don't need to hold a locomotive out of service waiting for an assembly to be rebuilt. You can get factory-rebuilt motors overnight—and pay no premium for this service.

Latest improvements in design and manufacture are



# **Motors Locomotives in the United States**

automatically incorporated—and you get the same warranty on "Unit Exchange" as on brand-new assembly. In addition to saving investment in unneeded facilities,

In addition to saving investment in unneeded facilities, you can operate with smaller inventories—save transportation costs—and keep your locomotives at work more hours per year.

For further information on this moneysaving service, write us or consult your Electro-Motive Representative.

## **Electro-Motive Division**

GENERAL MOTORS . LA GRANGE, ILLINOIS

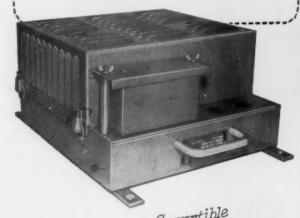
Home of the Diesel Locomotive



In Canada: GENERAL MOTORS DIESEL LIMITED
London, Ontario



# Another C-D first



A New Low-Cost A R. R. Converter

Yes, it's a new Cornell-Dubilier idea, Install the single vibrator economy Model 3600 converter now and convert to a dual vibrator, automatic switchover unit at any future time. Change over in a few seconds without tools.

Same rugged dependability as the nationally famous "3200 Series C-D RR Converter" but priced for low cost initial (single vibrator) installation. 50% longer vibrator life expectancy.

Write for Bulletin EB-3600, Cornell-Dubilier Electric Corp., Indianapolis, Indiana. Affiliated Member A.A.R.



CONVERSION KIT Consists of Standby Vibrator and automatic Switch. Can be purchased whenever you're ready for dual vibrator service.



INSTANT ACCESSIBILITY Trunk hasps afford quick access for conversion. Either RACK or BULKHEAD unting, as ordered.



PLUG-IN CONVERSION Field changeover like a vacuum tube. Kit can be plugged-in in minutes without tools.



COMPLETE UNIT Available initially for dual vibrator operation factory equipped with automatic changeover feature.



IO. PLAINFIELD, M. J.; NEW BEDFORD, WORCESTER & CAMBRIDGE, MASS.; PROVIDENCE & HOPE VALLEY, LNAPOLIS, IND.; FUQUAY SPRINGS & SANFORD, M. C.; SUBSIDIARY: RADIART CORP. CLEVELAND, O.

Revised edition of a standard technical work on the varying aspects of train acceleration and retardation

Just Published—

By Lewis K. Sillcox

**Honorary Vice Chairman** New York Air Brake Co.

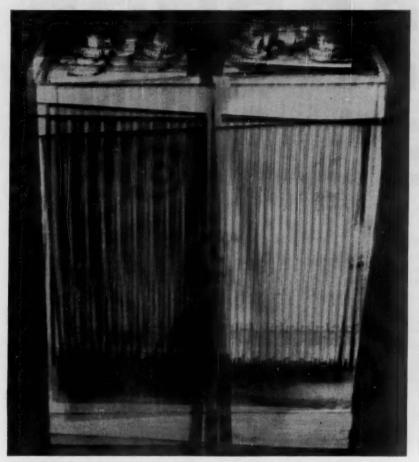
Based on the author's lectures at the Massachusetts Institute of Technology and first published in 1941, the scope of this book is far wider than the title, Mastering Momentum, suggests. Its six chapters discuss: Mechanics of train operation and braking; Car wheels and axles; Locomotive and car truck design; Rail reaction and riding qualities; Draft gear, and Conclusion. This thorough revision was brought completely up to date in the light of modern practices. 248 pages; 61/4" x 91/4"; 87 illustrations, charts and tables; cloth; \$5.75, postpaid.

### RAILWAY AGE BOOKS

30 Church St., New York 7, N.Y.

# **EXIDE-IRONCLAD BATTERIES**

For railway diesel starting



Actual photo taken during vibration torture test on an Ironclad Battery



Section of Ironclad positive plate

### Vibration can't loosen active material — can't shorten battery life



When a heavy duty storage battery gets the "shake treatment," battery life is literally at the mercy of the bond between the positive grid and the active material. Heavy shedding means short life.

But look what happens in an Exide-Ironclad Battery. Active material is held firmly captive inside the plastic power tubes. Hair-thin slits let electrolyte in, but keep active material from falling out. In prolonged vibration tests, this unique design has proved to be a valuable battery life stretcher. These findings are confirmed in the long, dependable service of Exide-Ironclad Batteries in typical high-vibration applications.

This superior performance is only one of the many extra advantages in Exide-Ironclad Batteries - advantages that have earned them an unmatched reputation for long life and high capacity. When you order heavy duty batteries, or the equipment that requires them, be sure to specify Exide-Ironclad. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.



WHY THE

# WORKBOOK OF THE RAILWAYS IS THE

# ADBOOK OF THE RAILWAYS, TOO

Railway Age ...

...1. is first with vital industry news

...2. carries most working information

...3. carries most buying information

...4. its readers have elected to read

No RAILWAY EXECUTIVE would buy a product or service if he could get the same thing for nothing. Sounds elementary, doesn't it? All right, let's put it another way...

No railway executive would buy RAILWAY AGE if he could get the same thing for nothing.

Put yourself in the shoes of a railway executive — depending on a flow of timely, authoritative information. You find these startling differences between RAILWAY AGE and the giveaway second magazine:

- Over 90% of the major articles in RAILWAY AGE are "firsts" or "exclusives."
- Railway Age carries more than twice as many working information pages as the No. 2 magazine.
- RAILWAY AGE carries more than a quarter more buying information (advertising) pages than the No. 2.

Result — RAILWAY AGE readers spend good money so they can spend good time reading the editorial and advertising pages of RAILWAY AGE.

Now put yourself in the shoes of an advertiser . . .

You find RAILWAY AGE is read by real honest-to-goodness readers who sign renewals and write checks — readers to whom RAILWAY AGE is essential—"The Workbook of the Railways," And not only is RAILWAY AGE the only industry-wide magazine with a paid audited circulation — by contrast the circulation of the second magazine isn't even verified.

Then you see why RAILWAY AGE is "The Adbook of the Railways", too! SIMMONS-BOARDMAN PUBLISHING CORP., 30 Church St., N. Y. 7, N. Y.



RAILWAY AGE Workbook of the Railways

## NOW AVAILABLE FOR IMMEDIATE DELIVERY— essays on

## "Traditional Differentials" in Railway Rate-Making

... Should they and can they be maintained under rivalry from contract and private transportation?

A limited supply of this new 44-page publication containing the two prize winning essays and 8 "honorable mention" essays in the recent "Traditional Differentials" essay contest sponsored jointly by Warren W. Brown, President, Monon Railway, and by Railway Age is now available for immediate delivery. A provocative foreword suggests that "many thousands of brain-hours of competent men" need to be devoted to the study and solution of problems relating to the development of a sound contemporary railroad pricing policy.

Among the authors:

### Alan M. White

Member, Railroads' Tariff Research Group, Washington, D. C.

#### William G. Scott

Transport Economist, Railway Association of Canada, Montreal

### Dr. Thomas C. Campbell

Associate Professor of Economics, West Virginia University

#### William K. Tate

Vice President, Freight Traffic, New Haven Railroad

### Charles S. Baxter

Chairman, Railroads' Tariff Research Group, Washington, D. C.

### -and five additional able contributors

PRICE: \$1.00 — with substantial discounts for quantity orders.

SIMMONS-BOARDMAN PUBLISHING CORPORATION
30 Church Street New York 7

#### POSITION WANTED

RAILROAD SUPPLY SALES-MAN—thoroughly experienced; 14-year background of successful sales to midwestern roads. 47 years of age. Married; college graduate. Box 1623, RAILWAY AGE, 79 West Monroe Street Chicago 3, Illinois.

### FOR SALE

4 DIESEL ELEC.
LOCOMOTIVES
ALL LOCOMOTIVES OWNED
BY US
25 TON G.E., SERIAL 27504
35 TON PORTER, SERIAL 7452
2-45 TON PORTER, SERIAL NOS.
7384 & 7393
R. C. STANHOPE, INC.
60 E. 42nd St., N.Y. 17, N.Y.

### **CLASSIFIED ADVERTISEMENTS**

### FOR SALE

Used-As Is-Reconditioned

### RAILWAY CARS

LOCOMOTIVES
Diesel, Steam, Gaseline
Diesel-Electric

### SPECIAL OFFERING

3—30-Cubic Yard, 50-Ton, Magor, Lift Door, Side Dump, Automatic Air-Operated DUMP CARS

## SERVICE-TESTED FREIGHT CAR REPAIR PARTS For All Types of Core

RAILWAY TANK CARS

6,000 - 8,000 and 18,008-gullen Cleaned and Tested

### IRON & STEEL PRODUCTS, INC.

"ANYTHING containing IRON or STEEL"

General Office 13486 So. Brainard Ave. Chicago 33, Illinois Phone: Mitchell 6-1212 New York Office 30-c Church Street New York 7, New York Phone: BEekman 3-8230

### POSITION OPEN

Superintendent for short line railroad. Need top grade man to keep this property in excellent operating condition. Good salary for right man.

All replies strictly confidential. Write full qualifications and references to George Y. Duffy, Vice President, Port Huron & Detroit Railroad Company, Port Huron, Michigan.

### FOR SALE

Tank Cars 8,000-gallon, Class III

Single-compartment; also two- and three-compartment. Coiled and noncoiled. Cars now in interchange service.

### THRALL CAR MANUFACTURING CO.

Chicago Heights, Illinois Chicago phone: INterocean 8-9383

### FOR SALE

RECONDITIONED

RAILROAD CARS FOR INTERPLANT USE
GONDOLAS • BOX • FLAT

### **ERMAN-HOWELL DIVISION**

332 South Michigan Avenue Chicago 4, Illinois WEbster 9-0500

### ADVERTISERS

## RAILWAY AGE

### Adbook of the Railways, too

A	M
ACF Industries	Miner, Inc., W. H
Aluminum Company of America 44 Agency—Fuller & Smith & Ross, Inc.	
American Brake Shoe Co., National Bearings Division	National Aluminate Corp Inside Front Cover  Agency—Armstrong Advertising Agency  National Bearings Division, American Brake
	Shoe Co
Classified Advertisements 51	Company Inside Back Cover Agency—Palm & Patterson, Inc.
Cornell-Dubilier Electric Corporation 48  Agency—Friend Reiss McGlone Advertising	
Crane Company	P
	Port Huron & Detroit Railroad Company 51
E	
Electro-Motive Division, General Motors Corporation	S
Erman-Howell Division	Stanhope, Inc., R. C 51
Exide Industrial Division, Electric Storage Battery Company	
	T
F	Thrall Car Manufacturing Co 51
Fairbanks-Morse & Co	
	U
G	Union Switch & Signal Division of Westinghouse Air Brake Company
General American Transportation Corp 22  Agency—Weiss & Geller, Inc	Uni-Pak Corp
General Railway Signal Company Back Cover	
Griffin Wheel Company	w
	Westinghouse Air Brake Company 4
I	Agency-Batten, Barton, Durstine & Osborn, Inc.
Industrial Brownhoist Corp 6  Agency—Price, Tanner & Willox, Inc.	
Institute of Thread Machiners	Y
Iron & Steel Products, Inc 51	Youngstown Steel Door Company Front Cover

This index is an editorial feature, maintained for the convenience of readers. It is not a part of the advertiser's contract and Railway Age assumes no responsibility for its correctness.



# Rubber-Cushioned Draft Gears

Piggyback freight, a growing and important source of new business for the rail-roads, is looked upon by the Pennsylvania Railroad as requiring equipment as modern and up-to-date as the service itself. That's why over 500 new cars for the Pennsy's TrucTrain are equipped with Rubber-Cushioned Draft Gears.

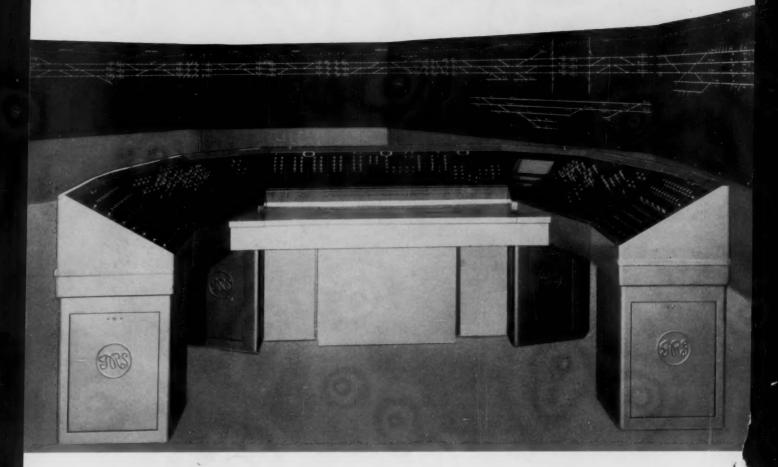
The high cushioning capacity of National rubber gears affords added protection to this valuable new railroad business.

NATIONAL MALLEABLE CASTINGS COMPANY

Cleveland 6, Ohio

COUPLERS . YOKES . DRAFT GEARS . FREIGHT TRUCKS . SNUBBER PACKAGES . JOURNAL BOXES and LIDS

# INTERLOCKING PLANTS controlled from ONE GRS Master Control Center



A MAJOR midwestern railroad plans to consolidate the control of 12 large interlockings in a single NX Master Control Center. Four of the twelve plants will soon be in service—the remaining eight plants will be installed in the future.

All control levers are on a compact console within arm's length of a seated operator. Train movements and other indications are clearly displayed on a separate track diagram.

By using G-R-S Quikode, a new high-speed coded control system, 30 controls and 60 indications can be transmitted simultaneously in a second.

Before you plan a "mile-long" control panel using multiple operators, ask about the new G-R-S Master Control Center for interlocking consolidation or extended cTc territories.

